CES Environmental Services, Inc.

4904 Griggs Road Houston, TX 77021 Phone: (713) 676-1460

Fax: (713) 676-1676

Bill To:

AMTEX Machine Products, Inc.

Attn: Mr. Carlos Montanez

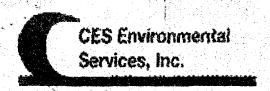
4517 Brittmoore Rd Houston TX 77041

Invoice

Date	Invoice #
12/19/2007	40970

		P.O. No.	Terms	Pro	oject
		·	Net 10		
Quantity	Description		Manifest #	Rate	Amount
	10/14/07				
4,624	12/14/07 Transportation services by CES @ \$0.07 p	per gallon		0.07	323.68
	24% Fuel Surcharge			77.69	77.69
4,624	Disposal of Non RCRA regulated rinsewa	ter @ \$0.115 per gallon	2164938JJK	0.115	531.76
	4% City of Houston Franchise Fee			16.06	16.06
	CES job #54821				
Ve appreci	iate your business!		Subtotal		\$949.19
ccount is c	ent Policy: Any unpaid balances begining on the due will accrue a per annum interest rate of 6%,	30th day after the unless otherwise stated	Sales Tax (8.2	25%)	\$0.00
n a formali	ized contract.		Total		\$949.19

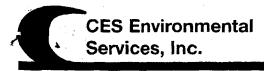
UNIFORM HAZARDOUS		itch) typewriter.)								n Approved	OMB NO	. 2050-
WASTE MANIFEST	1. Generator ID Number	/ CESANO		2. Page 1 of	3. Emer	gency Respons	e Phone	4. Manifest		493	8 J	JK
5. Generator's Name and Mailin	ng Address	1			ુંબુંઓ્	s Electronic F	Commit, h	an mailing addres				
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7. Transporter 2 Company Nam	10		-					U.S. EPAID N	lumber			
8. Designated Facility Name an	od Site Address						· · · · · · · · · · · · · · · · · · ·	U.S. EPAID N	lumber		_	
16400 When Rd	.\$							$(S_{t+1}, \xi_{t+1}) \in \mathcal{E}$	e a myster		26.5	
Facility's Phone: (409)	794-3119			t i Heft		objet	+ ++ * ; ;	M/A		of Asia		
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4904 Griggs Road Houston, TX 77021 Tel. (713) 876-1460 Fax. (713) 676-1676

Transportation Work Ticket

)ate: 12/14/2007	Bannis and Ban							
)ate : 12/14/2007 AMTEX Machine Products, In	Manifest #:							
Client :	Ticket:	54821						
Phone: 7138964488		Newpark Environmental Services,						
CES Environmental Sen	Consignee :	LLC						
Signature $X Fred Le$	ach Signature	4						
Leave CES Yard: 6115	Arrive At	Destination 10515						
Arrive At Customer : 7:05	Begin Un	lloading:						
Begin Loading: $\frac{2/25}{}$	MACON Production	Finish Unloading: Leave Destination: ////8						
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4904 Griggs Road Houston, TX 77021 Phone: (713) 676-1460

Fax: (713) 676-1676

Bill To:

AMTEX Machine Products, Inc.

Attn: Mr. Carlos Montanez

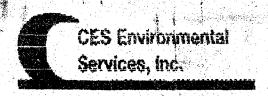
4517 Brittmoore Rd Houston TX 77041

Invoice

Date	Invoice #
12/21/2007	41031

		P.O. No.	Terms	Pr	oject
			Net 10		
Quantity	Description		Manifest #	Rate	Amount
	12/18/07				
5,218	Transportation services by CES @ \$0.07 p	er gallon		0.07	365.20
	24% Fuel Surcharge			87.67	87.6
5,218	Disposal of Non RCRA regulated rinse wa	ter @ \$0.115 per gallon	4011527JJK	0.115	600.0
	4% City of Houston Franchise Fee			18.12	18.1
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-		•			
	CES job #55100				
e appreci	ate your business!		Subtotal		\$1,071.1
	ent Policy: Any unpaid balances begining on the lue will accrue a per annum interest rate of 6%, u		Sales Tax (8.	25%)	\$0.0
	zed contract.		Total		\$1,071.12

lease p	int or type. (Form designed for use on elite (12-pitch) typewriter.)				<u> </u>		n Approved	OMB No.	2050-003
<u> </u>	FORM HAZARDOUS 1. Generator ID Number VASTE-MANIFEST TXCECO / CESQS		713) 890	.4 4 98	4. Manifest	401	152	.7 J	JK
	enerator's Name and Malling Address	Genera	tor's Site Address	(if different th	ian mailing addres	s)			
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6.1	ansporter 1 Company Name				U.S. EPA ID N				
	S their ornerial Services, Inc.						3402 -		
	ansporter 2 Company Name				U.S. EPA ID N	umber			
8. D	esignated Facility Name and Site Address				U.S. EPA ID N	lumber			
262				Shake F		TYPAL			
3 1	ere: TX, 7765 Illy's Phone: (479) 754 2113				1 W/A				
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15.	GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of	f this consignment are fully	and accurately de	scribed abov	e by the proper sh	ipping nam			
	marked and labeled/placarded, and are in all respects in proper condition for transport Exporter, I certify that the contents of this consignment conform to the terms of the atta			ional governr	nental regulations.	If export sl	nipment and I	am the Prin	nary
	I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a	large quantity generator)		all quantity ge	enerator) is true.		· · · · · · · · · · · · · · · · · · ·		1
Ge	erator's/Offeror's Printed/Typed Name	Signature	Victo		AV is evera			nth Day	
r J 16.	International Shipments				<u>(4) (4) (7)</u>		<u> </u>		
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_	Discrepancy Indication Space Quantity Type		Residue		Partial Rej	notion		Full Re	iostion
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101	2018 (14K)		Manifest Reference	Number:					
آوا ا	Alternate Facility (or Generator)				U.S. EPA ID N	umber			
Fac	ility's Phone:				1				
180	. Signature of Alternate Facility (or Generator)	 					Mo	onth Da	ıy Year
<u> </u>									
18t 18t	Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste	treatment, disposal, and re	cycling systems)		1,				
]]]	had been a little and the	3.	. Y		4.				
20.	Designated Facility Owner or Operator: Certification of receipt of hazardous materials or	overed by the manifest exc	ept as noted in Iter	n 18a		· · · · ·		<u></u>	
	ted/Typed Name	Signature	111	1/2	1 ,		Мо	nth Day	Year
DA F	m 8700-22 (Rev. 3-05) Previous editions are obsolete.		L. L.L.		1			410	<u> [/]</u>
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4904 Griggs Road Houston, TX 77921 Tel. (713) 676-1460 Fax (713) 676-1676

Transportation Work Ticket

White (CES Office)

ate:	12/18/2007	Manifest # :	004011527 JOK
	AMTEX Machine Products		
lient :		Ticket:	<u>551W</u>
hone :	7138964488	Consignee :	Newpark Environmental Services, LLC
ranspor ignature	VICTOR FIN	iervices, Inc.	Elch Hy
Arrive A Begin L	ES Yard: +2-3 It Customer: +2-4 nading: +2-5	5 Begin Ur Finish U	Destination 3.59 Hoading:
	oading: 1:35 ustomer:	Leave De	estination:
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Yellow (CES Office / Billing)

Pink (CES Office / IFTA)

Golden Rod (Customer)

NEWPARK ENVIRONMENTAL SERVICES LLC.

INVOICE

Invoice Date December 17, 2007

Invoice Number 7822

Profile Number 1105081043BH

DEC 2 1 2007

								Contrac AFI		
Date	Manifest #	Receipt #		Invoice Description					Line Total	Purchase Order
12/3/2007	002164622JJK	125430	SLUDGES		4765.00	GAL	(a)	0.090 / GAL	428.85	4.78.8>
12/6/2007	002164716JJK	125478 8	SLUDGES		5458.00	GAL	@	0.090 / GAL	491.22	44/22
12/11/2007	002164837JJK	12 <u>56</u> 04 I	LIQUIDS		4868.00	GAL	<u>@</u>	0.060 / GAL	292.08	292.08
12/14/2007	002164938JJK	125732 I	LIQUIDS		4624.00	GAL	4 0	= 0060/GAL	277.44	217.44
							I	nvoice Total	\$1,489.59	
		T THE REAL PROPERTY AND A SECOND PROPERTY AN								
									j	

81015 CES ENVIRONMENTAL SERVICES INC

TX

77021

Accounts Payable

HOUSTON

4904 GRIGGS ROAD

POSTED

TICKET NUMBER

125732

GATE RECEIPT

PROFILE NUMBER:

1105081043BH

CUSTOMER NAME:

CES ENVIRONMENTAL SERVICES INC

BID NUMBER:

I-1043

GATE DATE:

12/14/2007

TT

GENERATOR:

AMTEX MACHINE

CONTAINER TYPE

MANIFEST #	WASTE DESCRIPTION:	CHARGES	VOLUME	RATE	UOM	TOTAL	TONS	%OIL	% SOLIDS
002164938JJK	PHOSPHATING LIQUIDS	PHOSPHATING LIQUIDS 0 - 2 SOLIDS AND <5% OIL	4624.00	0.060	GAL	277.44	19	0	2
PO NUMBER:		TRANSPORTER: CES				•			

COMMENTS:

TOTAL: 277.44

	Generator ID Number	writer.)	1 of 1.3 Emergency Respon	se Phone	4 Manifest	Form A	pproved. OMB No	2050-0
UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number TXCESQG / CE	SQG 1	(713) 89		00	2164	1938	IJΚ
5 Generator's Name and Maillin MTEX Machine Product S17 Brittmoore Road Jouston, TX 77041	ng Address B., I Fic. 8 96-448 8		Generator's Site Addre AMTEX Mechine 4517 Brittmoore Houston, TX 77	Road 041		s)		
senerator's Phone.	ål Services, Inc.			(713) 896-4		089504		╂—
7. Transporter 2 Company Nam					<u> </u>		161	_
. Hansporter 2 Company Han					U.S. EPA ID N	lumber		1
Resignate Facility Name an 16400 Wilber Rd Vinnie TX, 77665	PSIP Adde: LC				U.S. EPAID N	lumber		
-acility's Prione:	on (including Proper Shipping Name, Ha	azard Class, ID Number,	10. Con	tainers	11. Total	12. Unit		+-
HM and Packing Group (if a	any))	_	No.	Type	Quantity	Wt./Vol.	13. Waste Co	de
NOT HYCKA/INOT I	OOT regulated rinse wate	r	1	TT C	5000	G C	ESQ1042	╁
2.						-		1
3.								
4.								+
14 Special Handling Instruction	se and Additional Information							1
"Folder ID": "ANTEX) Wastew (a) 11070405726H	is and Additional Information Machine Products, Inc. (AMTE ater	X Machine Products, Inc	-Houston) Nonhaz		ob # - 5482 11d)	21	Mond	
·	670900	8)390	755		· 		4001	X
marked and labeled/placa Exporter, I certify that the	Pr's CERTIFICATION: I hereby declare rded, and are in all respects in proper or contents of this consignment conform to imization statement identified in 40 CFF	ondition for transport according to a the terms of the attached EPA Ack	applicable international and r knowledgment of Consent.	ational governmen	ntal regulations.			
Generator's/Offeror's Printed/Ty			Signature				Month D	ay Y
6. International Shipments	Import to U.S.	Export fr	rom U.S. Port of	entry/exit:	en		121	70
				aving U.S.:				
Transporter signature (for expo								
7 Transporter Acknowledgmen	of Receipt of Materials	To	Signature	1		0		* .
17. Transporter Acknowledgmer ransported 1 Printed/Typed Na	nt of Receipt of Materials me SEMIEN	J.R.	Tello,	Sex	D.	g.	1/21/	90
7 Transporter Acknowledgmen	nt of Receipt of Materials me SEMIEN	JRi	Signature Signature	Son	w.	ß.	1/21/	90
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17. Transporter Acknowledgmer represented 1 Printed/Typed Na Transporter 2 Printed/Typed Na	nt of Receipt of Materials THE SEMILEN TIME	J& i	Tello,		Partial Rej		Month D	90
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17. Transporter Acknowledgmer represented 1 Printed/Typed Na 18. Discrepancy 18a. Discrepancy Indication Sp. 18b. Alternate Facility (or Generalist) Sphone: 18c. Signature of Alternate Facility (19. Hazardous Waste Report M. 19. Hazardous Waste	nt of Receipt of Materials me SEM i EC me ace Quantity rator)	Type for hazardous waste treatment, dis	Signature Residue Manifest Refere sposal, and recycling system 3.	nce Number:	U.S. EPA ID N	ection	Month D	9 C Y Reject in

DISPOSAL CERTIFICATE

Newpark Environmental Services LLC located at 26400 Wilber Road, Winnie, Texas operates a nonhazardous industrial waste processing and injection facility, disposing of nonhazardous class 1, 2 and 3 wastes under Texas Natural Resource Conservation Commission Permit No. SW-39098.



This document certifies that the waste stream generated by corresponding to Newpark Environmental Services LLC Profile Number

1105081043BH

and Manifest Number

002164938JJK

was processed and disposed by method of injection on

December 15, 2007

Newpark Environmental Services LLC Representative

Phillip @ Oak

NEWPARK ENVIRONMENTAL SERVICES

TICKET NUMBER

GATE RECEIPT

7

:4097941355

FAX NO.

BIG HILL

FROM : NEWPARK

EPAHO010003307

03:22PM	PROFILE NUMBER: 1105081043BH CUSTOMER NAME: CES ENVIRONMENTAL SERVICES INC BID NUMBER:			DEC 17 2007			GATE DATE: GENERATOR: CONTAINER TYPE	AM	14/20 07 I TEX MACHIN E	!
2006	MANIFEST#	WASTE DESCRIPTION:	CHARGES	VOLUME	RATE	UOM	TOTAL	TONS	%OIL	% SOLIDS
c. 17	002164938ЈЈК	PHOSPHATING LIQUIDS	PHOSPHATING LIQUIDS - 2 SOLIDS AND <5% O!L		0.060	GAL	277.44	19	0	2
De	PO NUMBER:		TRANSPORTER: CES							

COMMENTS:

TOTAL: 277.44

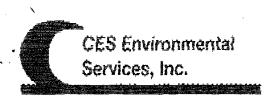
THANK YOU

Plea	se pri	int or type. (Form design	ned for use on elite (12-p	itch) typewriter.)		<u></u>	· .				Approved.	OMB No. 2	<u> 2050-0039</u>
1	W	ASTE MANIFEST	1. Generator ID Number	/ CESQG	2. Page 1 of	(7)	ency Response 13) 896	-44 88		<u> 216</u>	^{mber} 493	8 J.	JK
		nerator's Name and Mailin					s Site Address		an mailing addres			1	
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		etor., TX 77041 erator's Phone: (713) (696-4488		ļ	incusto:	n , TX 7704 (ii 715) 896	4485				
		nator a r none.	e al Services, Irv	-				•	U.S. EPA ID N	lumber ()895(1461		
		ansporter 2 Company Nam							U.S. EPA ID N				
Ш									1				
		signated Facility Name and	d Site Address						U.S. EPA ID N	lumber			
$\ \ $		15 Wilber Rd He TX, 77555		•				. *					
$\ \ $			794-3119						N/A				•
	9a. HM			Name, Hazard Class, ID Number	er,		10. Contair	ners Type	11. Total Quantity	12. Unit Wt./Vol.	13. \	Waste Code	s
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$\ \ $	14. S	ipecial Handling Instruction	s and Additional Information		···		1 d						
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	113)	1107040572811	/\\\\	Varia N	C) -1281	O~		No.	415)		1/1/2	orla	-//
	15.	GENERATOR'S/OFFERO	R'S CERTIFICATION: I here	eby declare that the contents of	this consignment	are fully an	d accurately de	scribed abov	e by the proper shi	ipping name	and are clas	sified, pack	aded.
Ш		marked and labeled/placar	ded, and are in all respects i	n proper condition for transport a conform to the terms of the attac	according to appli	icable interr	ational and nati						
Ш		I certify that the waste min	imization statement identified	l in 40 CFR 262.27(a) (if I am a I	arge quantity ger	nerator) or (Il quantity ge	nerator) is true.		No.	. D.	
\prod	Gene	erator's/Offeror's Printed/Ty			- 51g	gnature			19 - 19 - 19 - 19 - 19 - 19 - 19 - 19 -		Mor	ith Day "⊝la"Sa	Year ∤ ∂2
냗	16. In	nternational Shipments	Import to U.S.	06.4	Export from	II S	Port of en		af 14				7152 *
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ASS	Trans	sporter 2 Printed/Typed Nar			Sig	nature			Washing All Conf.	y y	Mor	ith Day	Year
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	/ /		ace Quantity	Ш Туре		<u></u>	Residue		Partial Rej	ection	į	Full Rej	ection
1	۲	1144		<u> </u>		Mai	nifest Reference	Number:		· ·		·	
15	18b.	Alternate Facility (or Gener	ator)						U.S. EPA ID N	lumber			
FAC	Facili	ity's Phone:							1				
但		Signature of Alternate Facil	ity (or Generator)	·					ı	·	Mo	nth Day	y Year
DESIGNATED FACILITY			· ·						*				
ES	19. H	lazardous Waste Report Ma	anagement Method Codes (i.	.e., codes for hazardous waste to	reatment, dispos	al, and recy	cling systems)		4.	-			
		11/4	ļ .		٦								
	\rightarrow		r Operator: Certification of re	eceipt of hazardous materials co	. ,		as noted in Iter	n 18a		· · · · ·		. =	, <i>(</i>
	Printe	ed/Typed Name	Morrie	· .	Si VI	grature	1 h	NY	V		1/9	pro Gay	401
	Form	n 8700-22 (Rev. 3-05)	Previous editions are obs	olete.			AL I	*	}		RANSPO	DTED'	COPY

MELTLER TOLEDO

Click My AUTHORIZED SIGNATURE

Newpark 26400 WIG WINNE TX		c N	43550	
NEHICLE		79500 40940) [b (1)) [b	
TIME 11 DATE 12	13 AM TNET 14 07	38560		
			10/15	
			///0	



4904 Griggs Road Houston, TX 77021 Tel. (713) 876-1460 Fax. (713) 676-1676

Transportation Work Ticket

Date:	12/14/2007	Manifest # :	
Client :	AMTEX Machine Prod	ucts, IncTicket:	54821
Phone:	7138964488 CES Environment	Consignee :	Newpark Environmental Services, LLC
Transpor Signature	ter:	Leach Signature	F
	ES Yard : <u>6 l</u> .t Customer : <u>7 l</u>	·	Destination <u>/0//5</u> Noading:
			nloading:
Finish L	oading:	Leave De	estination: ////
Leave C	ustomer: Z	SO Arrive Af	t CES Yard:
Custom	er PO #:	Total Hours:	CES Unioad:
Gross V	Veight :	Ending (Odometer :
Tare We	eight:	Begining	g Odometer : <u>/69082</u> @
Net Wei	ght:	Total Mi	les:
Driver :	Semien, Peter	Tractor # : 283	
ignature	Teleson	€ Trailer # : 206	Box # :
	C.		
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NEWPARK ENVIRONMENTAL SERVICES LLC.

INVOICE

77021

TX

DEC 2 1 2007

Invoice Date December 17, 2007

Invoice Number 7822

Profile Number 1105081043BH

Contract **AFE**

Date Manifest # Receipt # **Invoice Description Purchase Order** Line Total 12/3/2007 002164622JJK 125430 | SLUDGES 4765.00 GAL 0.090 / GAL 428.85 12/6/2007 0.090 / GAL 002164716JJK 125478 | SLUDGES 5458.00 GAL a. 491.22 12/11/2007 002164837JJK 125604 LIQUIDS 4868.00 GAL 292.08 192.08 (a) 0.060 / GAL 125732 LIQUIDS 4624.00 GAL 09944 12/14/2007 002164938JJK 0.060 / GAL 277.44 (a)**Invoice Total** \$1,489.59 POSTED

81015 CES ENVIRONMENTAL SERVICES INC

Accounts Payable

HOUSTON

4904 GRIGGS ROAD

NEWPARK ENVIRONMENTAL SERVICES TICKET NUMBER

125604

GATE RECEIPT

PROFILE NUMBER:

1105081043BH

CUSTOMER NAME:

CES ENVIRONMENTAL SERVICES INC

BID NUMBER:

I-1043

GATE DATE:

12/11/2007

GENERATOR:

AMTEX MACHINE

CONTAINER TYPE

MANIFEST #	WASTE DESCRIPTION:	CHARGES	VOLUME	RATE	UOM	TOTAL	TONS	%OIL	% SOLIDS
002164837JJK	PHOSPHATING LIQUIDS	PHOSPHATING LIQUIDS 0 - 2 SOLIDS AND <5% OIL	4868.00	0.060	GAL	292.08	20	0	0
PO NUMBER:		TRANSPORTER: CES							

COMMENTS:

UNSCHEDULED

TOTAL: 292.08

EPAHO010003312

THANK YOU

, I ii	print or type. (Form design	ed for use on elite (12-pitch) typewriter.)					Form	Approved, OMB N	o. 2050-0039
		1. Generator ID Number TXCESQG / CESQG	2. Page 1 of 1	(713) 896			216		JJK
	Generator's Name and Mailing TEX Machine Products	Address , Inc.		Generator's Site Address	(if different the	an mailing addres	s)		
	i17 Brittmoore Road ouston, TX 77041			4517 Brittmoore R Houston , TX 7704					
1	enerator's Phone; (713) 8	96-4488	!		713) 89 6-	4488			
	Frensporter 1 Company Name	il Services, Inc.				BOXT.	1285T	1461	
[/ 1Q1	
7.	Transporter 2 Company Name					U.S. EPA ID N	umber		
	Designated Facility Name and 1400 Wilber Rd	Site Addres 2.L.C				U.S. EPA ID N	umber		
W	innie TX, 77665	794-3119				N/A			
Fa	acimy's Priorie.			· · · · · · · · · · · · · · · · · · ·		1 11/7			
	 9b. U.S. DOT Description and Packing Group (if ar 	n (including Proper Shipping Name, Hazard Cla (v)	ass, ID Number,	10. Contai No.		11. Total Quantity	12. Unit Wt./Voj.	13. Waste Co	odes
H	D*** \$	OT regulated rinse water		1	Type	additacy	G.	CESQ1042	
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14		and Additional Information (AMTEX Mac	hine Products, IncHo	uston) Nonhaz	CES	Job # - 5464	6		1
	Wastewa	ter ·				40 8		1150	3 d
77	a) 11070495728H	D SPRIAY	iic)			11d)		48/08	ael
15	GENERATOR S/OFFEROR	'S CERTIFICATION: I hereby declare that the	contents of this consignment	are fully and accurately de	scribed above	by the proper shi	pping name	, and are classified, pa	ackaged,
	marked and labeled/placard	led, and are in all respects in proper condition in ontents of this consignment conform to the term	for transport according to appli	cable international and nat	ional governn	ental regulations.	If export sh	ipment and I am the P	rinhary
	I certify that the waste minir	nization statement identified in 40 CFR 262.27	(a) (if I am a large quantity gen	erator) or (b) (if I am a sma	all quantity ge	nerator) is true.			
G€	enerator's/Offeror's Printed/typ	1//	Sig	nature	<i>-</i>	1/ 1/	- 1.	Month D	ay Year
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18	Ba. Discrepancy Indication Spa	ce Quantity	Туре	Residue Manifest Reference	e Number:	Partial Rej		☐ Full	Rejection
18		ce Quantity	Туре		e Number:			Full	Rejection
18	Ba. Discrepancy Indication Spa	ce Quantity	Туре		e Number:				
18	Ba. Discrepancy Indication Span Bb. Alternate Facility (or General	ce Quantity	Туре		e Number:			Full Month	Rejection Day Year
18 18	Ba. Discrepancy Indication Span 8b. Alternate Facility (or General facility's Phone: 8c. Signature of Alternate Facil	ce Quantity ator)		Manifest Referenc					
18 18	Ba. Discrepancy Indication Span 8b. Alternate Facility (or General facility's Phone: 8c. Signature of Alternate Facil	ce Quantity ator)		Manifest Referenc		U.S. EPA ID N			
18 18 18	Ba. Discrepancy Indication Span 8b. Alternate Facility (or General facility's Phone: 8c. Signature of Alternate Facil	ce Quantity ator)		Manifest Referenc					
18 18 18	8a. Discrepancy Indication Span 8b. Alternate Facility (or General facility's Phone: 8c. Signature of Alternate Facil 19. Hazardous Waste Report N	ce Quantity ator) ity (or Generator) lanagement Method Codes (i.e., codes for haz	ardous waste treatment, dispo	Manifest Reference sal, and recycling systems)	U.S. EPA ID N			Day Year
18 18 18	8a. Discrepancy Indication Span 8b. Alternate Facility (or General facility's Phone: 8c. Signature of Alternate Facil 19. Hazardous Waste Report N	ce Quantity ator) ity (or Generator) lanagement Method Codes (i.e., codes for haz	ardous waste treatment, dispo	Manifest References and recycling systems and recycling systems and recycling systems are something to the systems are systems.) Item 18a	U.S. EPA ID N	lumber	Month	Day Year
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18 18	8a. Discrepancy Indication Spanish. 8b. Alternate Facility (or General Sec. Signature of Alternate Facility). 19. Hazardous Waste Report No. Designated Facility Owner.	ce Quantity ator) ity (or Generator) lanagement Method Codes (i.e., codes for haz	ardous waste treatment, dispo	Manifest References and recycling systems and recycling systems and recycling systems are something to the systems are systems.) Item 18a	U.S. EPA ID N	lumber	Month	Day Year
18 18	8a. Discrepancy Indication Spanish. 8b. Alternate Facility (or General Spanish) (or General	ce Quantity ator) ity (or Generator) lanagement Method Codes (i.e., codes for haz	ardous waste treatment, dispo	Manifest References and recycling systems and recycling systems and recycling systems are something to the systems are systems.) Item 18a	U.S. EPA ID N	lumber	Month	Day Year
18 18	8a. Discrepancy Indication Spanish. 8b. Alternate Facility (or General Spanish) (or General	ce Quantity ator) ity (or Generator) lanagement Method Codes (i.e., codes for haz	ardous waste treatment, dispo	Manifest Reference sal, and recycling systems) Item 18a	U.S. EPA ID N	lumber	Month	Day Year

DISPOSAL CERTIFICATE

Newpark Environmental Services LLC located at 26400 Wilber Road, Winnie, Texas operates a nonhazardous industrial waste processing and injection facility, disposing of nonhazardous class 1, 2 and 3 wastes under Texas Natural Resource Conservation Commission Permit No. SW-39098.



This document certifies that the waste stream generated by corresponding to Newpark Environmental Services LLC Profile Number

1105081043BH

and Manifest Number

002164837JJK

was processed and disposed by method of injection on

December 12, 2007

Newpark Environmental Services LLC Representative

Phillip @ Dail

NEWPARK ENVIRONMENTAL SERVICES

TICKET NUMBER

S 125604

GATE RECEIPT

PROFILE NUMBER: CUSTOMER NAME:

1105081043BH

CES ENVIRONMENTAL SERVICES INC

BID NUMBER:

12 2006 02:27PM

:4097941355

FAX NO.

I-1043

GATE DATE:

12/11/2007

GENERATOR:

AMTEX MACHINE

CONTAINER TYPE

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MANIFEST #	WASTE DESCRIPTION:	CHARGES	VOLUME	RATE	UOM	TOTAL	TONS	%OIL	% SOLUD
002164837JJK	PHOSPHATING LIQUIDS	PHOSPHATING LIQUIDS 0	4 868.0 0	0.060	GAL	292.08	20	0	e
		- 2 SOLIDS AND <5% OIL.							
PO NUMBER:		TRANSPORTER: CES							

COMMENTS:

UNSCHEDULED

TOTAL: 292.08

afel

POSTED

EPAHO010003315

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	5. Generator's 1	ore Russi "Whit	g Address			,	45.1	Brigariyana Fi Saya TV - Min	.∻d	an mailing addres	s)	:		
	Generator's Pho 6.1 Transporter,	ne:	at service	, irk.		•		· · · · · · · · · · · · · · · · · · ·	10,100	U.S. EPA ID N	umber	2461		
	7. Transporter 2	Company Name	<u> </u>	<u>.</u>	<u>. </u>					U.S. EPA ID N	umber			
	8-Designated F		Site Address			j	1			U.S. EPA ID N	umber	<u> </u>		
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			on (including Proper	Shipping Name, Haza	rd Class, ID Numbe	r,		10. Contair		11. Total Quantity	12. Unit Wt./Vol.	13.	Naste Code	3
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	marked ar Exporter, I	d labeled/placar certify that the c	ded, and are in all re ontents of this cons	N: I hereby declare the espects in proper cond ignment conform to the	lition for transport a e terms of the attacl	ccording to app ned EPA Acknow	icable inte wledgmen	ernational and nation of the consent.	onal governm	nental regulations.	pping name if export st	e, and are classipment and to	sified, pack am the Prima	agfed, ary
	I certify the		oed Name	identified in 40 CFR 20	62.27(a) (if I am a la		nerator) oi gnature	r (b) (if I am a sma	Il quantity ge	nerator) is true.		Mor	th Day	Year
INT'L +	16. Internationa		Import to	U.S.	<u> </u>	Export from	U.S.	Port of en	•	- Ý /		1//		k, ,d ,j
-			of Receipt of Mater	als	Nasaph / -	Si	gnature	Date leavi	ng U.S.:			Mor	th Dov	Voor
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	18b. Alternate F	acility (or Genera	ator)	•	· ·		M	lanifest Reference	Number:	U.S. EPA ID N	lumber		<u>-</u>	
FACILI	Facility's Phone			· ·										
DESIGNATED FACILITY	18c. Signature o	f Alternate Facili	ty (or Generator)		_	-				•		Mo	nth Day	Year
DESIG	1.	Vaste Report Ma	nagement Method	Codes (i.e., codes for 2.	hazardous waste tre	eatment, dispos 3.	al, and red	cycling systems)		4.				
			Operator: Certifica	tion of receipt of hazar	rdous materials cove			pt as noted in Item	18a		9,3			
	Printed/Typed N	1	-lothy	LULY		s	gnature	Chi	th	λ		Mg 	11	Year
FPA	Form 8700-22	(Rev. 3-05) P	revious editions	are obsolete.						<i></i>	T	RANSPO	DTED	CODV

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Clicke Hyy AUTHORIZED SIGNATURE

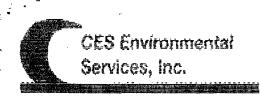
Newpark Env. Services LC CN 43465 26400 WILBER RD

WINNE IX 77665

74800 lb (1) ID 4 G*RO*SS VEHICLE TARE 34880 lb 1123

TIME 399*2*0 1*b*

2 57 PM NET 12 11 07 DATE



4904 Griggs Road Houston, TX 77021 Tel. (713) 676-1460 Fax. (713) 676-1676

Transportation Work Ticket

Date:	12/11/2007	Wanifest # :	
	AMTEX Machine Products		
Clent:	7(H) 127(H) ((CH)) (1) (CH)	Ticket:	54646
Phone:	7138964488		Newpark Environmental Services,
	CES Environmental S	Consignee : ervices, Inc.	LLC
Transport	1		
Signature	: VicTON 1C	Signature	
Leave C	ES Yard:	Arrive At	Destination 2:00
Arrive A	t Customer : // 'O	2 Begin Un	loading:
Begin Lo			loading:
Cinish L	oading: // <i>' 45</i>	Leave De	stination: 3:00
Leave C	ustomer:	Arrive At	CES Yard: <u>4,40</u>
Custom	er PO #:	Total Hours:	GES Unload:
Gross W	Veight:		Odometer: <u>1686772</u>
Tare We	ight:	Begining	g Odometer : <u>/88#74/</u>
Net Wei	ant:	Total Mil	ies :
Driver :	Semien, Peter	Tractor # : 283	Tote # :
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White (CES Office)

Yellow (CES Office / Billing)

Pink (CES Office / IFTA)

Golden Rod (Gustomer)

NEWPARK ENVIRONMENTAL SERVICES LLC.

INVOICE

DEC 2 1 2007

Invoice Date
December 17, 2007

Invoice Number 7822

Profile Number 1105081043BH

Contract AFE

Receipt # **Invoice Description** Line Total Purchase Order Date Manifest # 428.85 125430 SLUDGES 12/3/2007 002164622JJK 4765.00 GAL 0.090 / GAL 12/6/2007 125478 SLUDGES 491.22 5458.00 GAL 0.090 / GAL 002164716JJK (a)12/11/2007 125604 LIQUIDS 4868.00 GAL 292.08 002164837JJK 0.060 / GAL (a)277.44 09944 12/14/2007 002164938JJK 125732 LIQUIDS 4624.00 GAL 0.060 / GAL (a)**Invoice Total** \$1,489.59 POSTED

81015 CES ENVIRONMENTAL SERVICES INC

TX

77021

Accounts Payable

HOUSTON

4904 GRIGGS ROAD

GATE RECEIPT

PROFILE NUMBER:

1105081043BH

CUSTOMER NAME:

CES ENVIRONMENTAL SERVICES INC

BID NUMBER:

I-1043

GATE DATE:

12/06/2007

GENERATOR:

AMTEX MACHINE

CONTAINER TYPE

TΥ

MANIFEST #	WASTE DESCRIPTION:	CHARGES	VOLUME	RATE	UOM	TOTAL	TONS	%OIL	% SOLIDS
002164716ЈЈК	PHOSPHATING LIQUIDS	PHOSPHATING LIÇUIDS 3 - 10 SOLIDS AND <:% OIL	5458.00	0.090	GAL	491.22	. 23	0	3
PO NUMBER:		TRANSPORTER: CES							

COMMENTS:

TOTAL: 491.22

16. International Shipments Import to U.S. Export from U.S. Port of entry/exit:		se print or type. (Form design	ned for use on elite (12-pitch) type	ewriter.)					pproved. OMB No	2050-0039
### Acceptance Road Houston , TX 77041 (713) 896-4488 (713) 896-4488 (713) 896-4488 (713) 896-4488 (713) 896-4488 Centralistic Phone:	^		1. Generator PACESQG	2. Page			00	<u> 2164</u>	‡7 <u>16</u> J	JK
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Section Sect		7. Transporter 2 Company Name	9				U.S. EPA ID	Number		
Winnie TX, 77665 Facility's Phone: Sa			15 de Adulmas st. L.C.			<u>.</u>	U.S. EPAID	Number		
98. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, No. Type Quantity Wt.Vol. 13. Waste Codes Wt.Vol. No. Type Quantity Wt.Vol. 14. Report No. Type Quantity Wt.Vol. 15. Description (including Proper Shipping Name, Hazard Class, ID Number, No. Type Quantity Wt.Vol. 17. Total Quantity Wt.Vol. 17. Total Quantity Wt.Vol. 18. Waste Codes Wt. Vol. 19. Total Quantity Wt.Vol. 19. Total Quantity Wt.Vo		Winnie TX, 77665 (409)	794-3119				N/A			
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14. 14. 14. 15. 16.		HM and Packing Group (if a	^{ny))} XXT regulated rinse wate	ar	No.	Type	Quantity			
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Transporter 2 Printed/Typed Name Signature Signature Signature Signature Signature Signature Signature Month Day Month	M	•	·	Export f						
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<u> </u>	NSPO	Transporter 2 Printed/Typed Na	Treston Si	Anders_	Signature	N A	andu	n	Month D	6 07 Year
▲ 18. Discrepancy	TRA	18 Discrepancy			<u> </u>					
18a. Discrepancy Indication Space Quantity Type Residue Partial Rejection Full Rejection			ace Quantity	Туре	Residue	•	Partial R	ejection	Full F	ejection
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U.S. EPA ID Number	CILT	186. Алетате Расілу (ог Селег	alory				0.5. EPA 10	Number		
Facility's Phone:	TED FA		lity (or Generator)					······································	Month (Day Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)	₹	19. Hazardous Waste Report M	anagement Method Codes (i.e., codes	for hazardous waste treatment, dis	sposal, and recycling systems	3)	··			
	[훘	 			3.		4.			
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20. Designated Facility Owner of Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 1841 Reintelt/Typed Name Signature Signature Menth Day	DESIG			nazardous materials covered by the	manifest except as noted in I	tem 184)	1		Menth D	ey Xear

DISPOSAL CERTIFICATE

Newpark Environmental Services LLC located at 26400 Wilber Road, Winnie, Texas operates a nonhazardous industrial waste processing and injection facility, disposing of nonhazardous class 1, 2 and 3 wastes under Texas Natural Resource Conservation Commission Permit No. SW-39098.



This document certifies that the waste stream generated by corresponding to Newpark Environmental Services LLC Profile Number

1105081043BH

and Manifest Number

002164716JJK

was processed and disposed by method of injection on

December 07, 2007

Newpark Environmental Services LLC Representative

OD Qulled

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NEWPARK ENVIRONMENTAL SERVICES

TICKET NUMBER

£ 125478

GATE RECEIPT

PROFILE NUMBER: CUSTOMER NAME:

BID NUMBER:

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:4097941355

FAX NO.

FROM

1105081043BH

CES ENVIRONMENTAL SERVICES INC

1-1043

DEC 0 6 2007

GATE DATE:

GENERATOR:

12/06/2907 AMTEX MACHINE

CONTAINER TYPE TT

200	MANIFEST#	WASTE DESCRIPTION:	CHARGES	VOLUME	RATE	UOM	TOTAL	TONS	%OIL	% SOL
c. 07	902164716ЛК	PHOSPHATING LIQUIDS	PHOSPHATING LIQUIDS 3 - 10 SOLIDS AND <5% OIL	5458.00	0.090	GAL	491.22	23	0	3 -
Q	PO NUMBER:		TRANSPORTER: CES	-	·					• 1

COMMENTS:

TOTAL: 491.22

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POSTED

THANK YOU

EPAHO010003323

Plea	ase p		ned for use on elite (12-pitch						/ Form	Approved. OMB No.	2050-0039
1	- 3	VASTE MANIFEST	1. Generator ID Number	**************************************	2. Page 1 of	3. Emergency Re	_	00	<u>216</u>	4716 J	JK
		enerator's Name and Mailin	g Address					t than mailing addre	ss)		
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) (1,3) (erator's Phone:	3K-4463		1		(713) 89	M 4433			
			al Services, hv.	-				U.S. EPAID	Number, 5	146 f	
	7. T	ransporter 2 Company Name	e			N y		Ú.S. EPA ID I	Number		· · · · · · · · · · · · · · · · · · ·
	î8eE	esignated Facility Name and	1 Site Address					U.S. EPA ID I	Number	·	
	255	00 Wilter Rd						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
	MA, N	rike CA, 77655 148741	2343119			6 1		. M/A			
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	9a. HM	and Packing Group (if a		<u> </u>		10. No.	Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Code	s
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	15.	marked and labeled/placar Exporter, I certify that the c I certify that the waste mini	R'S CERTIFICATION: I hereby ded, and are in all respects in p contents of this consignment cor mization statement identified in	roper condition for transport actificing to the terms of the attached	cording to appli ed EPA Acknow ge quantity gen	cable international a rledgment of Conser erator) or (b) (if I am	tely described at and national gove nt.	mmental regulations	hipping name s. If export sh	ipment and I am the Prim	ary)
	Ger	erator's/Offeror's Printed/Typ	ped Name	e-1	51g 	nature				Month Day	
+	16.	International Shipments		· .	<u></u>	u.o. Do	rt of entry/exit:			1/2/0	401
INT	Tra	nsporter signature (for expo	limport to U.S. rts only):	ing the same of th	_ Export from t		rt of entry/exit: _ te leaving U.S.:				
띪	17.	Transporter Acknowledgmen	·				- 1/4				
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TRANSPORTER	Trai	nsporter 2 Printed/Typed Nar	me e	DHNOEFS	L	nature / / / / /	et like Lind	Ochnelle	Ali	Month Day	Year
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1	18.	Discrepancy									
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$\ \ $		545%	Fals			Manifact Do	ference Number:				
≽	18b	. Alternate Facility (or Gener	ator)			Manifest Ne	lerence Multiper.	U.S. EPA ID	Number		
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N O	Fac	ility's Phone: . Signature of Alternate Facil	thy (or Congretor)		•	•				Month Do	v Voor
DESIGNATED FACILITY	1000	. Orginature of Alternate Pacil	ity (or Generator)							Month Da	y Year
ゔ	19.	Hazardous Waste Report Ma	anagement Method Codes (i.e.,	codes for hazardous waste tre	atment, disposa	al, and recycling sys	tems)			L	
当	1.		2.		3.			4.			
1	L	HOU									
		Designated Facility Owner o ted/Typed Name	r Operator: Certification of recei	pt of hazardous materials cove		ifest except as noted	in Item 18a	1		Month Day	/ Year
	ľ	111				TIIL.	, i			1 /1/1 /	01/N
EP/	A For	7 8700-212 (Rev. 3-05) F	revious editions are obsole	te.		VC C	- /	11//	T	RANSPORTER	S COP



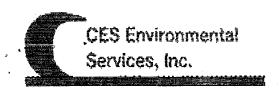
Cloke Wy AUTHORIZED SIGNATURE

Newpark Env. Services LC CN 43362 26400 WILBER RD WINNE TX 77665

ID 4 GROSS 80560 15 (1) VEHICLE 620 TARE 35260 15

TIME 12:19 PM NET 45300 16 DATE 12:06 07 ,

Plea	ase print or type. (Form desig	ned for use on elite (12-pitch) typewriter.)		· · · · · · · · · · · · · · · · · · ·				oproved. OMB No. 2050-00
\bigcap	UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Respo		00	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	716 JJK
П	5. Cenerator's Name and Mailin	g Address	Generator's Site Addu	ess (if different tha	an mailing addres	ss)		
	4517 Britimoore Roeds Houston, 17, 77041	89K-4463		4517 Britimoore Houston TX 7		4463		
	Generator's Phone: 8. Transporter, 1. Company Nam				<u> </u>		himber, 504	(Fe f
	7. Transporter 2 Company Nam	· · · · · · · · · · · · · · · · · · ·		S 34,		Ü.S. EPA ID N	lumber	- 1
	racility Name an	d Site Address			.	U.S. EPA ID N	··	<u></u>
	75400 When Ad Warring Dr. 17556							
	(40%)	754-3119				I M/A		
	1 000 1 0 00 00	on (including Proper Shipping Name, Hazard Class, ID Number	,		ntainers	11. Total	12. Unit	13. Waste Codes
	NOTE SCRAFFSON	Dottendard rese ware		No.	Туре	Quantity	Wt./Vol.	ESCHOAL
ATO		. 90				5000		
GENERATOR	2.			.4.		7		
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	3.						, ,	1210
	4.	O <i>O</i>					-	1215
$\{ \}$		The second secon					<u> </u> -	
		siand Additional Information - Let 17 1 Mechine Freedom	ens, fro th	coatorii Northiae	OES	30h \$ - 54)	98	
H	(Vastew 113) 1207040572511	11b)	13		i, es v	Reserved to		
П	15. GENERATOR'S/OFFERO	R'S CERTIFICATION: I hereby declare that the contents of th	is consignment	are fully and accurately	described above	by the proper sh	ipping name, ar	nd are classified, packaged
H	Exporter, I certify that the	rded, and are in all respects in proper condition for transport accontents of this consignment conform to the terms of the attach	ned EPA Acknow	vledgment of Consent.		_	. If export shipm	ent and I am the Primary
	Generator's/Offeror's Printed/Ty	imization statement identified in 40 CFR 262.27(a) (if I am a lar ped Name		gnature	smair quantity ger	terator) is true.		Month Day Year
1	16. International Shipments	Import to U.S.	Export from	IIS Porto	f entry/exit:			1131040
R INT'L	Transporter signature (for expo	rts only):			eaving U.S.:			
NETE:	Transporter 1 Printed/Typed Nar		Sig	nature	<u> </u>	/=		Month Day Year
TRANSPORTER	Transporter 2 Printed/Typed Na	Treston DANders	Si	nature This		andre	<u> </u>	Month Day Year
R	18. Discrepancy					-	·	
	18a. Discrepancy Indication Spa	ace Quantity Type		Residue		Partial Re	ection	Full Rejection
	5458	FALS		Manifest Refere	ence Number:			
Ë	18b. Alternate Facility (or Gener	ator)	-			U.S. EPA ID I	Number	
D FAC	Facility's Phone: 18c. Signature of Alternate Faci	lity (or Generator)	 			1	· · · · · · · · · · · · · · · · · · ·	Month Day Yea
DESIGNATED FACILITY						<i>x</i>		34, 100
DESIG	19. Hazardous Waste Report M	anagement Method Codes (i.e., codes for hazardous waste tre	eatment, dispos	al, and recycling system	ns)	4.		· · · · · · · · · · · · · · · · · · ·
	4121	or Operator: Certification of receipt of hazardous materials cove	ered by the man	ifest excent as noted in	Item 18a			· .
	Printed/Typed Name	, person sommoned of receipt of nezarous materials over		gnature		-		Month Day Year
EP/	A Form 8700-212 (Rev. 3-05) F	Previous editions are obsolete.		Wille	1	1//	TRA	NSPORTER'S COF



4904 Griggs Road Houston, TX 77021 Tel. (713) 876-1460 Fax. (713) 876-1678

Transportation Work Ticket

Folder ID: AMTEX Machine Products, Inc.(A Wastewater	MTEX Machine Produ	ucts, incHouston) Nonhaz
Date: 12/6/2007	Wanifest # :	2164716
AMTEX Machine Products, Inc. Client:	Ticket :	54198
Phone: 7138964488 CES Environmental Services, Ir	Consignee :	Newpark Environmental Services, LLC
Signature \(\lambda \text{Livity}	Signature	
Leave CES Yard: 745 Arrive At Customer: 830 Begin Loading: 900 Finish Loading: 925 Leave Customer: 935	Begin Un Finish Un Leave De	Destination 1/25 loading: 1/25 lloading: 1/2/0 stination: 1/2/5 CES Yard:
Customer PO #:	tal Hours:	CES Unload:
Gross Weight:	Ending (Odometer :
Tare Weight:	Begining	Odometer :
Net Weight: 5,000-G	Total Mil	es:
	ractor # : 295	Tote # :
Signature: Puston Sondin	Trailer # : 259	Box # :
Job Comments/Equipment :		
ов сониенсицириен.		,
	3 2/2	



JOB INFORMATION PROFILE

Folder ID : AMTEX Mac	hine Products, Inc.(A	MTEX Machine Products, IncHouston) Nonhaz Wastewater								
Customer: AMTEX Ma	chine Products. Inc.	Driver : Sanders, Preston								
Address: 4517 Brittme		Helper:								
City,State,Zip : Houston TX		Date: 12/6/2007 Time: 0600								
CES Contact :() -		Truck# <u>295</u> Trailer # 256								
Job Description :	i •									
Contact is Fred Leach 281-22	24-8121									
) Vac out WASTEWATER a	s directed									
,										
) Haul load to Newpark and	offload	·								
ID #: 54198										
CUSTOMER INFORMAT	TON									
OPERATION HOURS:	SHIPPING/RECEIVIN	G CONTACT: AFTER HOURS CONTACT:								
Open :	Name:	Name:								
Close:	Number:	Number:								
RECEIVING INFORMAT	ION									
OPERATION HOURS:	SHIPPING/RECEIVIN	G CONTACT: AFTER HOURS CONTACT:								
Open :	Name:	Name:								
Close:	Number:	Number:								
DUDGUACE ODDER NUMBER R	FOURTHER.									
PURCHASE ORDER NUMBER R IF YES, P.O. #:		ES NO								
<u>IF 1L3, F.O. #.</u>										
PPE REQUIRED: YES	□ NO	HACSC REQUIRED: YES NO								
IF YES, WHAT?		IF YES, WHAT?								
CAN CUSTOMER LOAD US:	YES NO	WASHOUT ANTICIPATED: YES NO								
ROPPER PUMP:	☐ YES ☐ NO	BOX LINER REQUIRED YES NO								
LOADING/UNLOADING	REAR BELLY									
TRAILER TYPE:	DOES NOT MATTER									
BOX NUMBER:		a a saint and a high man and a saint and a saint saint and a saint								
CES OWNS BOX:	YES NO	CUSTOMER OWNS BOX: YES NO								
CES RENTED BOX:	YES NO	CUSTOMER RENTED BOX: YES NO								
AMOUNT OF HOSE NEEDED:										
SIZE:		PALLET JACK NEEDED: YES NO								

NEWPARK ENVIRONMENTAL SERVICES LLC.

INVOICE

RECEIVED
DEC 2 1 2007

Invoice Date
December 17, 2007

Invoice Number 7822

81015 CES ENVIRONMENTAL SERVICES INC Accounts Payable

4904 GRIGGS ROAD HOUSTON

TX

77021

Profile Number 1105081043BH

Contract AFE

Date 12/3/2007	Manifest # 002164622JJK	Receipt # 125430	SLUDGES	Invoice Description	4765.00 GAL	<u>@</u>	0.090 / GAL	Line Total 428.85	Purchase Order
12/6/2007	002164716JJK	125478	SLUDGES		5458.00 GAL	<u>a</u>	0.090 / GAL	491.22	46/1.7.)
12/11/2007	002164837JJK	125604	LIQUIDS		4868.00 GAL	<u>a</u>	0.060 / GAL	292.08	192.08
12/14/2007	002164938JJK	125732	LIQUIDS		4624.00 GAL	@	0.060 / GAL	277.44	29944
							Invoice Total	\$1,489.59	
			AMTEX				POSTE	ED	

EPAHO010003330

GATE RECEIPT

PROFILE NUMBER:

1105081043BH

CUSTOMER NAME:

CES ENVIRONMENTAL SERVICES INC

BID NUMBER:

I-1043

GATE DATE:

12/03/2007

GENERATOR:

TICKET NUMBER

AMTEX MACHINE

CONTAINER TYPE

TT

MANIFEST #	WASTE DESCRIPTION:	CHARGES	VOLUME	RATE	UOM	TOTAL	TONS	%OIL	% SOLIDS
002164622JJK	PHOSPHATING LIQUIDS	PHOSPHATING LIQUIDS 3 - 10 SOLIDS AND <5% OIL	4765.00	0.090	GAL	428.85	20	0	4
PO NUMBER:		TRANSPORTER: CES							

COMMENTS:

UNSCHEDULED

TOTAL: 428.85

Plea	se p	rint or type. (Form design	ed for use on elite (12-pitch) typewriter.)								Approved. C	MB No. 2	050-0039	
1		FORM HAZARDOUS VASTE MANIFEST	1. Generator ID Number	[#] SQG		2. Page 1 of	i	ncy Respons		1 00	216	4622	2 J .	IK	
		enerator's Name and Mailing	Address , The							nan mailing addres	ss)				
		7 Brittmoore Road iston, TX 77041						rittmoore P n , TX 770						1	
١	Gen	(713) 8 erator's Phone:	96-4488				1		(713) 8 9 6	-4488				1	
1	_	3 Privionneme		U.S. TX(1)	1089 5()461									
	7. Transporter 2 Company Name										Number				
1		anopolia, a con quity								}				_ }	
		esignated Facility Name and	Site Address LLC							U.S. EPA ID	Number				
	26400 Wilber Rd Winnie TX, 77665													- 1	
	ŀ	Facility's Phone: (409) 794-3119													
	9a.			pping Name, Hazard Cl	lass, ID Number,			10. Conta		11. Total	12. Unit	13. W	aste Code	s	
	HM	and Packing Group (if an		ringe water				No.	Type	Quantity	Wt./Vol.	CESOID	≤Q1 0 42		
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	14	Special Handling Instructions	s and Additional Inform	ation								<u> </u>		L	
	'''	۱۳۵۳ : Ciller کی Policer کی Wastews		, Inc.(AMIEX Max	chine Products	i, incMo	ouston) N	ONNEX	Œ	5 Job # - 538	62		1.	_	
	11a) 1107 (107 EES	QG 11b	6)30	gal	11c)<	3)39	1098		11d)		l	114	5W	
	15.	GENERATOR'S/OFFEROM marked and labeled/placan	ded, and are in all resp	ects in proper condition	for transport accor	rding to appl	licable inten	national and na							
		Exporter, I certify that the collection in the collection of the collection in the collection in the collection of the collection in the collection of the c							nall quantity g	enerator) is true.				4	
	Ger	erator's/Offeror's Printed/Typ	oed Name)	<u> </u>	Si	gnature	Y		12 1.	^	Mont			
<u>→</u>	16.	International Shipments						0 -		720		Vo	23	10/	
Ż	Tra	International Shipments Insporter signature (for expor	Import to U.: ts only):	S .		Export from	U.S.		entry/exit: ving U.S.:				 -		
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ANSI	Trai	sporter 2 Printed/Typed Nar				Si	gnature	<u> </u>				Mont		Year	
E	10														
1	├ ─	Discrepancy Discrepancy Indication Spa	ice												
l		,	Quantity		Туре		Residue Partial Rejection Full Rejection Manifest Reference Number: U.S. EPA ID Number								
\ ≻	195	Alternate Equility (or Congr	ator)												
늦	100	b. Alternate Facility (or Generator)								0.0. El MID	Manuel				
¥		ility's Phone:		· · · · · · · · · · · · · · · · · · ·					··		·				
AEC	18c	Signature of Alternate Facili	ity (or Generator)									Mor	nth Day	y Year	
DESIGNATED FACILITY	19.	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, a						cling systems))						
DE	1	121.	2.			3.	·_·			4.					
1	20	Designated Facility Owner p	r Ongratur Codification	on francist of home	e materiale acusar	d by the L	nifact avec-	no natari in It.	om 100		·				
$\ \ $	_	designated Facility Owner of the Typed Name	Operator, Certification	i or receipt or nazardou	a materials covered		ignature	as noted in its	EIII IDA			Mos	th. 20	Year	
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FP.	\ For	m 8700-22 (Rev. 3-05) F	Previous editions are	e obsolete.			25010			1-6 den-			1- m-	· · · · · · · · · · · · · · · · · · ·	

DISPOSAL CERTIFICATE

Newpark Environmental Services LLC located at 26400 Wilber Road, Winnie, Texas operates a nonhazardous industrial waste processing and injection facility, disposing of nonhazardous class 1, 2 and 3 wastes under Texas Natural Resource Conservation Commission Permit No. SW-39098.



This document certifies that the waste stream generated by corresponding to Newpark Environmental Services LLC Profile Number

1105081043BH

and Manifest Number

002164622JJK

was processed and disposed by method of injection on

December 04, 2007

Newpark Environmental Services LLC Representative

La D D gulles 99



NEWPARK ENVIRONMENTAL SERVICES

TICKET NUMBER

125430

GATE RECEIPT

PROFILE NUMBER: CUSTOMER NAME:

BID NUMBER:

7

Dec. 04 2006 03:03PM

FAX NO. :4097941355

1105081043BH

I-1043

CES ENVIRONMENTAL SERVICES INC

DEC 0 6 2007

GATE DATE:

GENERATOR:

12/03/2007

AMTEX MACHINE

CONTAINER TYPE

TT

MANIFEST #	WASTE DESCRIPTION:	CHARGES	VOLUME	RATE	UOM .	TOTAL	TONS	%OIL	% SOL 102
002164622ЈЈК	PHOSPHATING LIQUIDS	PHOSPHATING LIQUIDS 3	4765.00	0.090	GAL	428.85	20	0	4
PO NUMBER:		- 10 SOLIDS AND <5% OIL TRANSPORTER: CES							• :

COMMENTS:

UNSCHEDULED

TOTAL: 428.85

antex

POSTED

(12/3 1/2/6)

FROM :NEWPARK BIG HILL

EPAHO010003333

Î	LIVIE	ORM HAZARD	14.0	use on elite (12 erator ID Number	z-pitch) typewrite	er.)	2. Page 1 of	3. Emerae	ency Response	Phone	4. Mänifest	Tracking N	n Approved umber		
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		nerator's Name ar		SS				Generator AMTEX	's Site Address	(if different th	ian mailing addres ຳພ	ss)			
		Brittmoore Fitton, TX 7704							rittmoor <mark>a R</mark> n., TX 7704						
l	Gener	rator's Phone:	(713) 896-4			•		1 15828602		(713) 896	4488		r' ·		
	ĉ E	nsporter 1 Compa	ny Name	ervices, L	ne.						U.S. EPAID N	lumber	1461		
	1.	nsporter 2 Compa									U.S. EPA ID N				
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l		signated Facility N	lame and Site A	ddress							U.S. EPA ID N	lumber			
į		0 William Rd													
l		ie TX, 77865 y's Phone:	(409) 794-	3119			17	3 j			1 N/A				
	9a.	9b. U.S. DOT [Description (inclu		oing Name, Hazard	d Class, ID Numbe	er,	· . [10. Contair	ners	11. Total	12. Unit	40	Waste Co	
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Newpark Env. Services LC CN De 400 WILBER RD WINNER JX 77665

METTLER TOLEDOS

TIME

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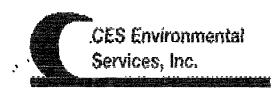
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43226

39.740 lb

AUTHORIZED SIGNATURE



4904 Griggs Road Houston, TX 77021 Tel. (713) 676-1460 Fax. (713) 676-1676

Transportation Work Ticket

Folder ID: AMTEX Machine Products, Inc.(Wastewater	AMTEX Machine Prod	ucts, IncHouston) Nonhaz
Date: 12/3/2007	Manifest # :	**************************************
AMTEX Machine Products, Inc. Client:	Ticket:	53852
Phone: 7138964488 CES Environmental Services,	Consignee :	Newpark Environmental Services, LLC
Transporter: Signature	Signature	
Leave CES Yard : 3.00 Arrive At Customer : 3.45		Destination <u>6:3。</u> Iloading: ファカシ
Begin Loading: 3.56		nloading: 7/46
Finish Loading: 4:25 Leave Customer: 4:30		ces Yard:
Customer PO #:	otal Hours:	CES Unload:
Gross Weight :	-	Odometer :
Tare Weight :	Begining Total Mil	g Odometer : <u>6 6843</u> les :
Driver: Tucker, Derek	Tractor # : 294	
ignature : DIII	Trailer # : 205	Box # :
ob Comments/Equipment :		
White (CES Office) Yellow (CES Office /	/ Alijina\ Piak // S	ES Office / IFTA) Golden Rod (Customer)

MATERIAL SAFETY DATA SHEET

Date Printed: 07/13/2006 Date Updated: 02/05/2006

Version 1.5

Section 1 - Product and Company Information

Product Name

Product Number Brand

ACETAL, 99%

A902 ALDRICH

Company Address Sigma-Aldrich

3050 Spruce Street

SAINT LOUIS MO 63103 US

Technical Phone:

Fax:

800-325-5832 800-325-5052

Emergency Phone:

314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name ACETAL

105-57-7

SARA 313 No

Formula

C6H14O2

Synonyms

Acetaal (Dutch) * Acetal * Acetal diethylique

(French) * Acetale (Italian) *

1,1-Diaethoxy-aethan (German) * Diaethylacetal

(German) * 1,1-Diethoxy-ethaan (Dutch) * 1,1-Diethoxyethane * Diethyl acetal * 1,1~Dietossietano (Italian) * Ethane,

1,1-diethoxy- * Ethylidene diethyl ether * USAF

DO-45

RTECS Number:

AB2800000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Flammable (USA) Highly Flammable (EU). Irritant.

May form explosive peroxides. Irritating to eyes and skin.

HMIS RATING

HEALTH: 2

FLAMMABILITY: 3 REACTIVITY: 1

NFPA RATING

HEALTH: 2

FLAMMABILITY: 3 REACTIVITY: 1 ·

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

FLAMMABLE HAZARDS

Flammable Hazards: Yes Peroxide Former: Yes

EXPLOSION HAZARDS

Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

FLASH POINT

- 5.8 °F - 21.0 °C Method: closed cup

EXPLOSION LIMITS

Lower: 1.65 % Upper: 10.4 %

AUTOIGNITION TEMP

230 °C

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Carbon dioxide, dry chemical powder, or appropriate

foam.

Unsuitable: Do not use water.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Flammable liquid. Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL Evacuate area. Shut off all sources of ignition.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

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HANDLING

User Exposure: Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep container closed. Keep away from heat, sparks, and open flame.

SPECIAL REQUIREMENTS

Heat-, light-, and moisture-sensitive. Do not distill to dryness.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Cle Color: Colorless	ear liquid
Property	Value	At Temperature or Pressure
Molecular Weight	118.18 AMU	
pH BP/BP Range	N/A 100.0 - 103.0 °C	
MP/MP Range	N/A	
Freezing Point	N/A	
Vapor Pressure	20 mmHg	20 °C
Vapor Density	4.1 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	0.826 g/cm3	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	and the second of the second o
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity Surface Tension	N/A	
Partition Coefficient	N/A N/A	
Decomposition Temp.	N/A	
Flash Point		Method: closed cup
Explosion Limits	Lower: 1.65 %	

ALDRICH - A902

www.sigma-aldrich.com

Upper: 10.4 %

N/A Flammability Autoignition Temp 230 °C 1.381 Refractive Index Optical Rotation N/AMiscellaneous Data N/A Solubility N/A

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions of Instability: May form peroxides on prolonged storage. Date container and periodically test for peroxides. Conditions to Avoid: Light. Heat. Moisture. Materials to Avoid: Strong oxidizing agents, Strong reducing agents, Strong bases.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes eye irritation.

Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract. Material may be irritating to mucous membranes and upper respiratory tract. Ingestion: May be harmful if swallowed.

SIGNS AND SYMPTOMS OF EXPOSURE

Exposure can cause: CNS depression. Gastrointestinal disturbances. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

TOXICITY DATA

Oral

Rat

4600 mg/kg

LD50

Intraperitoneal

Rat

900 MG/KG

LD50

LD50

Oral Mouse 3500 mg/kg

Intraperitoneal Mouse

ALDRICH - A902

www.sigma-aldrich.com Page 4

500 MG/KG LD50

Oral Rabbit 3545 mg/kg LD50

IRRITATION DATA

Skin Rabbit 500 mg 24H

Remarks: Mild irritation effect

Section 12 - Ecological Information

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Acetal

UN#: 1088 Class: 3

Packing Group: Packing Group II Hazard Label: Flammable liquid

PIH: Not PIH

IATA

Proper Shipping Name: Acetal

IATA UN Number: 1088 Hazard Class: 3 Packing Group: II

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: F-Xi

Indication of Danger: Highly Flammable. Irritant.

R: 11-36/38

Risk Statements: Highly flammable. Irritating to eyes and skin.

S: 9-16-33

Safety Statements: Keep container in a well-ventilated place. Keep away from sources of ignition - no smoking. Take precautionary measures against static discharges.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Flammable (USA) Highly Flammable (EU).

Irritant.

Risk Statements: May form explosive peroxides. Irritating to eyes and skin.

Safety Statements: Keep away from sources of ignition - no

ALDRICH - A902

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smoking. Do not empty into drains. Take precautionary measures against static discharges. Keep container tightly closed in a cool well-ventilated place.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2006 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

U.S. DEPARTMENT OF LABOR

Occupational Safety and Health Administration

MATERIAL SAFETY DATA SHEET

	29	May be used to compl 9CFR 1910.1200. Sta	y with	J mus	t be consulted for	r sp	nications Standard. pecific requirements.		
				SF	CTION I				
MANUFACTURER'S NAM	/IE/RE	PACKAGED BY	:		<u> </u>	7-	TELEPHONE NO.		
Certified Safety Manufacturing Company, Inc.							(816) 4	83-9090)
ADDRESS:									
1400 Chestnut Avenue	Kans	as_City, Missou	ri 6	412	7		4.1.		
IDENTITY (AS USED ON	LABE	Ē L):				T	DATE PREPARED:	DATE	REVIEWED:
	4/coh	nol (IPA) 99%					07/25/06		09/25/06
SE	CTIO	N II – HAZARDO	ous	ING	REDIENTS/ID	DE	NTITY INFORMATION		
HAZARDOUS COMPONE									
				%					S RECOMMENDED
Isopropyi Alcohol (IPA)		# 67-63-0		99%	400 pp	om	OSH	IA STEL	_=500ppm
(Isopropanol, 2-Propan	ol, Di	methyl Carbinol)							
THIS DRODI	CTIC	S DDODLICED AC	- C A L	IE A I	TH CARE ITE	E N	1 "FOOD, DRUG OR C	OSMET	TIC
							ES WHILE IN THE W		
							REMENTS OF; 29CFF		
							N 29CFR 1910.1200 (E		
					PHYSICAL D				070
BOILING POINT (°F):		181°F	SP	ECI	FIC GRAVITY	Y (F	120= 1):		.878
VAPOR PRESSURE (mm		33 mm 20 °C (68°F)			NG POINT:				No Data
SOLUBILITY IN WATER:		Miscible	% volatiles by Vol.:				No Data		
PH:		No Data	FR	EEZ	ING POINT:				-127°F
APPEARANCE AND ODG		Colorless, volatile	e liqu	uid w	ith the odor of	of ru	ubbing alcohol		
		SECTION IV - FI	RE /	ND	EXPLOSION	I H	AZARD DATA		
FLASH POINT (Method u					VABLE LIMIT			UEL:	12%
Open Cup) EXTINGUISHING MEDIA:	· Hee	water for alcoh	ol fo		dry chemical o	or (<u></u>		
L		<u></u>						Nan ar	
SPECIAL FIRE FIGHTING unprotected personnel. We									ea or
UNUSUAL FIRE AND EX									ne cooled with
large amounts of water to									
rupture.	pieve	in ballaap of line	IIIai	pics	sure due to ve	apo	or generation which co	uiu resu	nt in container
rupture.					·		·		
		SECT	ON '	V - I	REACTIVITY	DA	\TA		
STABILITY:	STAE		1	$\overline{\mathcal{T}}$	····		ITIONS TO AVOID: N	one kno	wn
INCOMPATABILITY (Mat			ια οχ	idize					
		Y OCCUR	<u></u>				TO AVOID: Heat, spa		
HAZARDOUS POLYMERIZATION:	 			1			n aluminum >120° F	<u> </u>	
POLTIVIERIZATION.	VVIL	L NOT OCCUR	i	V					
HAZARDOUS PRODUCT	S: C	O ₂ and unidentifi	ed o	rgan	ic compounds	s m	nay be formed of decor	npositio	n.
			_						

ROUTE(S) OF ENTRY: INHALATION?: yes SKIN?: yes INGESTION?: yes DERMAL CONTACT?: yes HEALTH HAZARDS (Acute and Chronic): N/A

CARCINOGENICITY: Not identified as a carcinogen by the NTP Annual Report on Carcinogens, IARC Monographs or by OSHA.

SIGNS AND SYMPTOMS OF OVEREXPOSURE: Inhalation: Mild irritation of eyes, nose and throat.

Ingestion: Drowsiness, headache Dermal contact: Dry, cracking skin Acute Effects: Irritation of skin and/or upper respiratory tract as noted above. Acute CNS depression may be manifested as giddiness, headache, dizziness and/or nausea. Chronic Effects: Chronic exposure can result in skin irritation and contact dermititus. Pre-existing disorders of the skin, eyes, and respiratory tract may be exacerbated by exposure to isopropyl alcohol.

EMERGENCY AND FIRST AID PROCEDURES: Inhalation: Remove victim to fresh air and provide oxygen if breathing is difficult. Seek medical attention if breathing continues to be difficult. Eye: Flush eyes with copious amount of water for a least 15 minutes. Skin: Flush with water. If irritation persists, seek medical attention.

<u>Ingestion:</u> Do not induce vomiting if victim is unconscious or drowsy. Seek medical attention or contact the poison control center.

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Large Spills: Eliminate all ignition sources. Equipment must be grounded to prevent sparking. Evacuate the area of unprotected personnel. Contain source of spill. Dike or otherwise confine spilled product. Uncontrolled releases to air, land or water may be reportable to the National Response Center (1-800-424-8802.) Small Spills: Take up with absorbent material and placed in non-leaking container; seal tightly. Dispose of absorbent.

DISPOSAL CONSIDERATIONS: Contact your supplier or a licensed contractor for detailed recommendations.

DISPOSAL REGULATORY REQUIREMENTS: Follow applicable Federal, state, and local regulations. Consider fuel blending as an alternative to incineration. ENVIRONMENTAL DEGRADATION: Should be removed readily from soils and water by volatilization and biodegradation.

SECTION VIII - SPECIAL PROTECTION INFORMATION						
VENTILATION:	LOCAL EXHAUST: √	SPECIAL: None				
	MECHANICAL (General): None	OTHER: None				
Engineering measures: U	Engineering measures: Use explosion-proof ventilation equipment as necessary to maintain airborne concentrations					
	containers to prevent static spark	s during fluid transfers.				
PROTECTIVE GLOVE: G		EYE PROTECTION: Goggles				
OTHER PROTECTIVE EQUIPMENT: NIOSH approved respiratory protection required when above PEL/TWA.						

SECTION IX – SPECIAL PRECAUTIONS PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Handling Use non-sparking tools to open containers. Maintain appropriate class of fire extinguishers nearby in case of fire. Storage: Store in tightly closed containers in a cool, dry area away from heat and other possible ignition sources. Recommended Hygiene Practices: Clean PPE and work clothing contaminated prior to reuse. After working with this product, be sure to wash before eating, smoking, drinking or applying cosmetics.

THIS INFORMATION AND RECOMMENDATIONS HEREIN ARE TAKEN FROM SOURCES BELIEVED TO BE ACCURATE AS OF THE DATE, HOWEVER CERTIFIED SAFETY MAKES NO WARRANTY WITH RESPECT TO THE ACCURACY OF THIS INFORMATION OR THE SUITABILITY OF THE RECOMMENDATIONS, AND ASSUMES NO LIABILITY TO ANY USE THEREOF......

5501 Baker Road Baytown, Texas 77520 P O Box 1516 Baytown, Texas 77522 281/424-4505 FAX 281/424-3532



MATERIAL SAFETY DATA SHEET

	ADVASO	DL Solvent	
	PRODUCT ID	ENTIFICATION	
Chemical Name: Petroleum Distillate	es		
Chemical Family: Petroleum Hydro	carbon		
Trade Name: ADVASOL 150 and A	ADVASOL 150E (7% max. na	phthalene)	
Synonyms: Aromatics Solvent, Was	sh Oil		
Revision Date: September 18, 2001			
Manufacturer /Distributor: Advance	d Aromatics, L.P. 5501 Bake	er Road Baytown, TX 77520	
EMERGENCY CONTACT: (28	81) 424-4505 24 hou	r number: (281)424-9566	Chemtrec: (800) 424-9300
ye and the second of the secon	HAZARDOUS	<u>COMPONENTS</u>	
The following chemical components 1910.1200, and are listed in Table Z-			Communication Std. 29 CFR
CAS No. Ma	aterial or Component	P	ercentage
91-20-3	Naphthalene		14% Maximum
64742-94-5	Heavy aromatic petr	roleum naptha	84% - 94%
	PHYSICAL DA	TA (EXPICATA	
Specific Gravity: .9598 @ 60°F		HACTILICAL)	
specific Gravity: .9398 @ 60 F		Boiling Point: 400°F	
		1	
Vapor Density (Air=1): 4.9 Vapor Pressure (PSIA): <1 @ 100°F		Boiling Point: 400°F	rate =1):<1.0
Vapor Density (Air=1): 4.9	: NEGLIGIBLE	Boiling Point: 400°F Freezing Point: -35°F	rate =1):<1.0
Vapor Density (Air=1): 4.9 Vapor Pressure (PSIA): <1 @ 100°F	<u></u>	Boiling Point: 400°F Freezing Point: -35°F Evaporation Rate (Butyl Acet Viscosity: 2cst @ 100°F	rate =1):<1.0
Vapor Density (Air=1): 4.9 Vapor Pressure (PSIA): <1 @ 100°F Solubility In Water at 1ATM & 25°C	<u></u>	Boiling Point: 400°F Freezing Point: -35°F Evaporation Rate (Butyl Acet Viscosity: 2cst @ 100°F	rate =1):<1.0
Vapor Density (Air=1): 4.9 Vapor Pressure (PSIA): <1 @ 100°F Solubility In Water at 1ATM & 25°C	en liquid with an aromatic odo	Boiling Point: 400°F Freezing Point: -35°F Evaporation Rate (Butyl Acet Viscosity: 2cst @ 100°F or.	rate =1):<1.0

For "Disclaimer of Liability", see the statement on Page 5.

Unusual Fire and Explosion Hazard: None Known.

Extinguishing Media: Use water, foam, carbon dioxide or dry chemical.

Special Fire Fighting Procedures: Wear complete personal protective equipment. SCBA required.

Page 1 of 5

REACTIVITY DATA

Advasol Solvent

tability: Product is stable under normal storage conditions.

Conditions to Avoid: Extreme heat. Avoid contact with strong oxidizers (e.g. Chlorine, Peroxides, etc.) Toxic fumes and heat can be generated.

Incompatibility: Strong Oxidizers

Hazardous Polymerization: Will not occur.

Hazardous Decomposition Products When Heated: CO and CO2 may be formed in the event of combustion. Toxic fumes may be formed during combustion.

HMIS RATING

NFPA 704 Rating:

0 - Insignificant

1 - Slight

2 - Moderate

3 - High

4 – Extreme

Health: 2

Flammability: 2

Reactivity: 1

Special Hazard: None

Personal Protection: B

HEALTH HAZARD INFORMATION

Symptoms of Exposure:

This is a combustible liquid that should be kept away from ignition sources. The product may cause skin irritation from prolonged exposure. Avoid breathing vapors, prolonged exposure could cause irritation to the respiratory system. Avoid contact when possible and use personnel equipment while handling this material. Use only in properly ventilated areas. Keep all containers closed when not in use. Empty containers will still contain residue, and should not be reused.

Health Effects:

ACUTE – Inhalation of high concentrations can cause nausea, dizziness, vomiting, disorientation, or unconsciousness. IRONIC – Prolonged skin contact can cause dry skin and defatting, resulting in irritation or dermatitis.

Ingestion: Do not take internally. Seek medical attention if exposure occurs.

Skin: Exposure may irritate skin. Wash skin thoroughly for 15 minutes if contact occurs.

Inhalation: Inhalation of vapors may cause irritation to lungs.

Eyes: May cause eye irritation. Seek medical attention if exposure occurs.

Special Medical Conditions Aggravated by Exposure: None known.

Primary Route of Entry: Skin contact.

Exposure Limits: None Established

Petroleum Distillate TLV = 500PPM (2000 mg/m3) / Naphthalene TLV = 10 ppm (50 mg/m3)

Carcinogen Status: Not listed on (NTP) National Toxicology Program "Annual Report on Carcinogens", or (IARC) Intl. Agency for Research on Cancer "Monographs", and is not classified by OSHA as a carcinogen. NTP studies TR-410 and TR-500 show evidence of increased tumor growth in rodents based upon exposure to Naphthalene.

Toxicity: At this time there are no toxicity studies that exist for this product.

FIRST AID

Ingestion: Do not induce vomiting. Contact physician.

cirin: Remove soiled clothing and wash with soap and water. Contact physician. If irritation persists, contact physician.

Lialation: Remove from area. If breathing irregular, administer oxygen.

Eyes: Flush eyes with water for at least 15 minutes. Contact physician.

SPILL OR LEAK PROCEDURES / WASTE DISPOSAL

a Case of a Transportation Accident, Contact CHEMTREC at 1-800/424-9300.

IN CASE OF SPILLS OR RELEASE: For small spill, use solid absorbent and shovel into disposal into disposal container. For large spills, dike the area to facilitate salvage or disposal. Shut off ignition sources and avoid breathing vapors. Avoid runoff into sewers and advise authorities.

Refer to DOT NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK for handling information.

Waste Disposal Method: Waste material should be disposed of consistent with federal, state, and local regulations. See Regulatory information below.

Disposal: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the RCRA 40 CFR 261, since it does not have the characteristics of Subpart C, nor is listed under Subpart D.

As a non-hazardous liquid waste, it should be solidified with stabilizing agents (sand, fly ash, or cement), so that no free standing liquids remain before disposal into an industrial landfill. A non-hazardous liquid waste can also be incinerated in accordance with local, state and federal regulations.

SPECIAL PROTECTION INFORMATION

Respiratory Protection: Have appropriate NIOSH approved respirator available. Organic cartridge respirator recommended.

Gloves: Impermeable gloves such as rubber, neoprene, PVC, viton, etc.

Eyes: Chemical splash goggles or faceshield. Eyewash facilities should be available in the area.

ntilation: General use of local exhaust as required to control exposure.

SPECIAL PRECAUTIONS

Storage and Handling: Product should be stored away from source of ignition, or oxidizing agents. Prevent skin contact.

TRANSPORTATION INFORMATION

The proper shipping name / hazard class may vary by packaging, properties, and mode of transportation.

Proper shipping names are:

ALL TRANSPORTATION MODES:

Petroleum Distillates, N.O. S.

(Unless Specified Below)

UN/ID No.:

UN 1268

HAZARD CLASS:

3 – Combustible liquid

PACKING GROUP:

-III

CARGO AIRCRAFT LIMIT: PASSENGER AIRCRAFT LIMIT:

220L 60L

TECHNICAL NAME(s):

Naphthalene, Methylnaphthalene(s)

RQ LBS. (Per pkg.):

700 Lbs. (at 14% Naphthalene in Advasol 150)

RQ COMPONENTS (s):

Naphthalene (100 lbs. Require reporting)

FLASH POINT:

150 Deg F

TRANSPORATION:

Petroleum Distillates, N.O. S

(IATA / ICAO)

For "Disclaimer of Liability", see the statement on Page 5.

Advanced Aromatics, L.P. UN/ID No.: UN1268 **HAZARD CLASS:** PACKING GROUP: III CARGO AIRCRAFT LIMIT: No Limit **ASSENGER AIRCRAFT LIMIT:** No Limit MARINE TRANSPORTATION: Environmentally Hazardous Substances, Liquid N.O.S (IMDG / IMO) UN/ID No.: UN 3082 **HAZARD CLASS:**

MARINE POLLUTANT (s):

PACKING GROUP:

None

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REGULATORY INFORMATION RIGHT-TO-KNOW PROGRAM

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and 40CRF372.

CAS No.	Material or Component	% by Weight	
91-20-3	Naphthalene	14% maximum	
64742-94-5	Heavy aromatic petroleum naphtha	84%-94%	

THE FOLLOWING FEDERAL REGULATIONS APPLY TO THIS PRODUCT:

OSHA HAZARD COMMUNICATION STD:

29 CFR 1910.1200 and 29 CFR 1910.1000 Table Z-1, Z-2, and Z-3.

sed on our hazard evaluation, the following components in this product are hazardous and the reasons are listed.

mEAVY AROMATIC NAPHTHA - Combustible, skin irritant.

NAPHTHALENE - Eye irritant

NAPHTHALENE – OSHA – 10ppm (50mg/m3) TWA for 8 hour workday, STEL = 15ppm (75 mg/m3).

ACGIH - 10ppm (52mg/m3) TWA for 8 hour workday, STEL = 15ppm (79 mg/m3).

CERCLA, 40 CFR 117,302: This product contains naphthalene, a reportable quantity (RQ) substance. The RQ for Naphthalene is 100 lbs. If a spill of Advasol 150 contains 100 or more pounds of Naphthalene, it requires notification to the National Response Center, Washington D.C. (1-800-424-8802). There may also be state and local requirements to report spills.

SARA TITLE III Section 302 - This product does not contain any components regulated under SARA TITLE III, Section 302 (Extremely Hazardous Substance).

Section 311, 312 - (MSDS Information) 40 CFR 370, This product has been determined to be hazardous, and should be reported under the following EPA hazard categories:

--xx--immediate (acute) health hazard

-----Delayed (chronic) health hazard

--xx--Fire Hazard

-----Sudden release of pressure hazard

----Reactive hazard

Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

Section 313 -This product contains the following component subject to regulation under SARA TITLE III, Section 313: Naphthalene XIC SUBSTANCE CONTROL ACT (TSCA): The components in this product are on the TSCA inventory.

SOURCE CONSERVATION and RECOVERY ACT (RCRA): Naphthalene is subject to regulation under 40 CFR 261

vanced Aromatics, L.P Advasol Solvent Revised 09/18

40 CFR 261 Subpart C & D. The hazardous waste code for naphthalene is U165.

CLEAN WATER ACT (CWA): Naphthalene is subject to regulation under sections 307 and 311 of the CWA.

CLEAN AIR ACT (CAA): Naphthalene is a listed "Hazardous air pollutant (HAP)" under Section 112 of the CAA.

STATE REGULATIONS:

California Proposition 65: Benzene, known to California to cause cancer, may be present as an impurity or residue.

Michigan Critical Materials: This product contains the following ingredient(s) identified on the Michigan Critical Materials Register:

Naphthalene

State Right to Know Laws: The following ingredient(s) are disclosed for compliance with state right to know laws:

METHYLNAPHTHALENE(S)

91-12-0

NAPHTHALENE(S)

91-20-3

INTERNATIONAL REGULATIONS: This product is a WHMIS controlled product under the House of Commons of Canada Bill C-70 (class B3 and class D2A). The product contains the following substance(s), from the Ingredient Disclosure List or has been evaluated based on it's toxicological properties, to contain the following hazardous ingredient(s):

HEAVY AROMATIC PETROLEUM NAPTHA

64742-94-5

84%-94%

NAPHTHALENE

91-20-3

14% maximum

ALL INFORMATION ON THIS MSDS MUST BE INCLUDED IN ALL MSDS THAT ARE COPIED AND DISTRIBUTED FOR THIS MATERIAL.

information is provided for the customers of Advanced Aromatics; however, it does not address in detail the use, storage or handling of the product. Users of the product, considering their use, storage or handling of the product, may need to develop additional procedures. The information should not be relied on to insure compliance by the customer with any federal, state or local legal requirements. Information provided herein, are not product specifications.

MATERIAL SAFETY DATA SHEET

Date Printed: 04/03/2007 Date Updated: 08/22/2006

Version 1.1

Section 1 - Product and Company Information

Product Name

ACETONE-2, 4-DNPH, 50MG, NEAT

Product Number Brand

442436 SUPELCO

Company

Sigma-Aldrich

Address

3050 Spruce Street

SAINT LOUIS MO 63103 US

Technical Phone:

800-325-5832

Fax:

800-325-5052

Emergency Phone:

314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name

CAS #

SARA 313

ACETONE

1567-89-1

No

2,4-DINITROPHENYLHYDRAZONE, ENVIRONM

ENTAL STANDARD

Formula

C9H10N4O4

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Irritant.

Irritating to eyes, respiratory system and skin. Possible sensitizer.

HMIS RATING

HEALTH: 2

FLAMMABILITY: 0 REACTIVITY: 0

NFPA RATING

HEALTH: 2

FLAMMABILITY: 0

REACTIVITY: 0

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious

amounts of water.

EYE EXPOSURE

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

FLASH POINT N/A

AUTOIGNITION TEMP N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

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Section	9	_	Physical	/Chemical	Properties
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Appearance	Physical State: So	lid			
Property	Value	At	Temperatur	e or	Pressure
Molecular Weight	238.21 AMU				
Hq	N/A				
BP/BP Range	N/A				
MP/MP Range	126.0 - 128.0 °C				
Freezing Point	N/A				
Vapor Pressure	N/A				
Vapor Density	N/A				
Saturated Vapor Conc.	N/A				
SG/Density	N/A				
Bulk Density	N/A				
Odor Threshold	N/A				
Volatile%	N/A				
VOC Content	N/A				
Water Content	N/A				
Solvent Content	N/A				
Evaporation Rate	N/A				
Viscosity	N/A				
Surface Tension	N/A				
Partition Coefficient	Log Kow: 1.51				
Decomposition Temp.	N/A				
Flash Point	N/A				
Explosion Limits	N/A				
Flammability	N/A				
Autoignition Temp	N/A				
Refractive Index	N/A				
Optical Rotation	N/A				
Miscellaneous Data	N/A				
Solubility	N/A				
N/A mot arrailable					

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin. Eye Contact: Causes eye irritation.

Inhalation: May be harmful if inhaled. Material is irritating to

mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

SIGNS AND SYMPTOMS OF EXPOSURE

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To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
Contact a licensed professional waste disposal service to dispose
of this material. Dissolve or mix the material with a combustible
solvent and burn in a chemical incinerator equipped with an
afterburner and scrubber. Observe all federal, state, and local
environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: None Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION

Symbol of Danger: Xi

Indication of Danger: Irritant.

R: 36/37/38

Risk Statements: Irritating to eyes, respiratory system and skin.

S: 26

Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Irritant.

Risk Statements: Irritating to eyes, respiratory system and skin.

Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

US Statements: Possible sensitizer.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: No NDSL: Yes

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not

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purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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Redox Logo with tag line

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION

Product Name: FATTY ALCOHOL TECH 9/8

Other Names: C9-C11 SYNTHETIC ALCOHOL ETHOXYLATE (C9-11) ALKYL ALCOHOL, ETHOXYLATE

Uses: Surfactant.

Organisation Redox Pty Ltd

Location

2 Swettenham Road Minto NSW 2566 Australia

Telephone Ask For 02-97333000

Technical Officer

Poisons Information Centre

Westmead NSW

131126 1800-251525

2. HAZARD IDENTIFICATION

Hazardous according to criteria of NOHSC

HARMFUL; IRRITANT

Risk Phrases

R22

Harmful if swallowed.

R41 Risk of serious damage to eyes.

Safety Phrases

S25

Avoid contact with eyes.

S26

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S37/39 Wear suitable gloves and eye/face protection.

ERMA New Zealand Approval Code: No Data

HSNO Hazard Classification: 6.1D 6.3A 8.3A 9.1D 9.3C

This Material Safety Data Sheet may not provide exhaustive guidance for all HSNO Controls assigned to this substance. The ERMA website www.ermanz.govt.nz should be consulted for a full list of triggered controls and cited regulations

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Entity

CAS No.

Proportions (%)

ALCOHOLS, C9-11, ETHOXYLATED

[68439-46-3]

100

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed

Do NOT induce vomiting. Rinse mouth out with water, Give water to drink. Seek immediate medical assistance.

Eye

Immediately flush eyes with copious amounts of water holding eyelids open. Transport to hospital or medical centre.

Skin

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Remove contaminated clothing. Flush affected area with copious amounts of water. If irritation persists, seek medical assistance.

Inhaled

Remove victim from exposure to fresh air. Keep at rest until fully recovered. If rapid recovery does not occur, seek medical assistance.

Advice to Doctor

Treat symptomatically based on individual reactions of patient and judgement of doctor. Product can cause corneal burns.

Additional Information

Aggravated medical conditions caused by exposure

No information available on medical conditions aggravated from exposure to this product.

5. FIRE FIGHTING MEASURES

Extinguishing Media

In case of fire, appropriate extinguishing media include large fires - water fog, fine water spray or foam. small fires - foam, dry chemical, carbon dioxide and water spray.

Hazards from Combustion Products

This product is a combustible liquid. Heating can cause expansion or decomposition leading to violent rupture of containers. Excessive heat will lead to accelerated oxidative degradation. On burning, product will emit toxic fumes including carbon dioxide and carbon monoxide.

Special protective precautions and equipment for fire fighters

Fire fighters should wear a self contained breathing apparatus and full protective clothing along with protective equipment.

Flammability Conditions

Combustible liquid.

Additional Information

Hazchem Code: N/A

6. ACCIDENTAL RELEASE MEASURES

Emergency procedures

Personnel involved in the clean up should wear full protective clothing. Eliminate all sources of ignition. Increase ventilation. Avoid walking through spilled product as it may be slippery. Do NOT allow product to reach drains or waterways. If product does enter a waterway advise the Environmental Protection Authority or your local Waste Authority. Use spark-proof tools and equipment.

Methods and materials for containment and clean up

Soak up spilled product using absorbent non-combustible material such as sand or soil. Avoid using sawdust or cellulose. When saturated, collect material into suitable, labelled, dry, sealable containers and hold for safe disposal. Once pick up is complete, flush the spill site with water to eliminate any residue. Hold contaminated water for treatment.

7. HANDLING AND STORAGE

Precautions for safe handling

Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment.

Conditions for safe storage, including any incompatibles

Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Open containers slowly in order to control possible pressure release. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Bulk storage tanks should be diked (bunded). Use non-sparking tools and equipment. Store away from incompatible materials including oxidizing agents, acids and ignition sources. Protect from direct sunlight. This product is classified as a "C2" Combustible Liquid for the purpose of storage and handling.

Container Type

Stainless steel or mild steel vessels are recommended. Do NOT use copper or its alloys.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

National Exposure Standards

No exposure standard has been established for this product by the Australian National Occupational Health and Safety Commission (NOHSC). However, the exposure standard for dust not otherwise specified is 10mg/m3 (for inspirable dust) and 3mg/m3 (for respirable dust).

Biological Limit Values

No biological limit allocated for this product.

Engineering Controls

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

Personal Protection

RESPIRATOR: If inhalation risk from spray mists exists, wear an NIOSH approved half face-piece filter respirator suitable for organic particulates meeting the requirements of AS/NZS1715 and AS/NZS1716. EYES: Chemical goggles. HANDS: Impervious gloves. CLOTHING: Wear overalls and safety shoes to prevent exposure.

- Consideration of the Constitution of the Con	auco como esco como como acomo en esta reversa en el el filoso de la como el filoso de la como contra como el f
9. PHYSICAL AND CHEMICAL PROPERTIES	
Appearance	white hazy liquid
Formula	Unspecified.
Odour	mild odour
Vapour Pressure	<10Pa mm Hg (1 atmosphere)
Vapour Density	Not Applicable
Boiling Point	N/A deg C
Melting Point	13'C deg C
Solubility in water	Soluble
Specific Gravity	0.998 (Water = 1)
Flash Point	Closed Cup >184'C
pH	6-8 (1% aqueous solution)
Flammability Limits (as percentage volume in air)	
Lower Explosion Limit	Not Applicable
Upper Explosion Limit	Not Applicable
Ignition Temperature	355'C
Specific Heat Value	Not Applicable
Particle Size	Not Applicable
Volatile Organic Compounds (VOC) content	Not Applicable
Evaporation Rate	Not Applicable
Viscosity	21cP
Percent Volatile	No Data
Octanol/Water partition coefficient	Not Applicable
Saturated Vapour Concentration	Not Applicable
Additional Characteristics	Not Applicable
Flame Propagation/Burning Rate of Solid Materials	Not Applicable
Properties of materials that may initiate or contribute to fire intensity	Not Applicable
Potential for Dust Explosion	Product is a liquid.
Reactions that Release Flammable Gases	Not Applicable
Fast or Intensely Burning Characteristics	Not Applicable
Non-flammables that could contribute unusual hazards to a fire	Not Applicable
Release of invisible flammable vapours and gases	No Data
Decomposition Temperature	No Data

Additional Information

Solubility: Readily soluble in water, simple alcohols glycol ethers, esters, chlorinated solvents and many aromatic oils and solvents. Insoluble in middle distillate fractions and paraffinic oils.

10. STABILITY AND REACTIVITY

Chemical Stability: Product is stable under normal conditions of use and storage.

Conditions to avoid: Avoid excessive heat, direct sunlight, static discharges and high temperatures.

Incompatible Materials: Incompatible with oxidizing agents, acids and sources of ignition.

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11. TOXICOLOGICAL INFORMATION

Toxicity Data

Oral LD50 Rat: 1000-2700mg/Kg Eye Rabbit: Severely irritating. Environmental and Human Safety of Major Surfactants - Alcohol Ethoxylates and Alkylphenol Ethoxylates, Talmage S. Lewis Publishers 1994.

Health Effects - Acute

Swallowed

Harmful if swallowed. May cause nausea, vomiting, diarrhoea, abdominal pain and irritation of the gastro-intestinal tract.

Eye

Risk of serious damage to eyes. Severe eye irritant. Contamination of eyes can result in permanent injury. Corrosive to eyes, contact can cause cornea burns.

Skin

May result in irritation. Will have a degreasing action on the skin. Repeated/prolonged skin contact may lead to irritant contact dermatitis.

Inhaled

Not expected to cause respiratory irritation unless present as an aerosol. Inhalation of high concentrations of mist may result in respiratory irritation.

1.2. ECOLOGICAL INFORMATION

Ecotoxicity: No Data

Persistence and degradability: BOD 28 day/COD: 56% (OECD 301C) Dissolved Organic Carbon Removal (DOC removal): 80% (OECD 301C) This product is expected to be readily biodegradable.

Mobility: No information available on mobility for this product.

Additional information

Environmental fate (exposure): Avoid contaminating drains, sewers and waterways.

Bioaccumulative potential: No information available on bioaccumulation for this product.

13. DISPOSAL CONSIDERATIONS

Disposal

Dispose of in accordance with all local, state and federal regulations.

Special Precautions for land fill or incineration

Product is suitable for disposal by incineration or landfill through an an explosion hazard. Do not puncture, cut or weld unclean an explosion hazard. Do not puncture, cut or weld unclean an explosion hazard.

14. TRANSPORT INFORMATION

UN No.

Shipping Name

Not Allocated

Dangerous Goods Class

Subsidiary Risk

FATTY ALCOHOL TECH 9/8

Pack Group

Precaustion for User

C.2

Hazchem Code

None Allocated

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None Allocated

HARMFUL; IRRITANT

N/A

Poisons Schedule POISONS Schedule POISONS SCHEDULE PG N/A AICS Name ALCOHOLS, C9-11, ETHOXYLATED NZ TOXIC Substance NC Additional information No Data 16, OTHER INFORMATION

Revision Date: Sep 2005

Additional information

Legend to	abbreviations and acronyms:
<	less than
>	greater than
AICS	Australian Inventory of Chemical Substances
CAS	Chemical Abstracts Service (Registry Number)
CO2	Carbon Dioxide
COD	Chemical Oxygen Demand
ERMA	Environmental Risk Management Authority
HSNO	Hazardous Substance and New Organism
IDLH	Immediately Dangerous to Life and Health
LC50	LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.
LD50	LD stands for "Lethal Dose". LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals
Misc	miscible
N/A	Not Applicable
NIOSH	National Institute for Occupational Safety and Health
NOHSC	National Occupational Health and Safety Commission
OECD	Organization for Economic Co-operation and Development
PEL	Permissible Exposure Limit
RCP	Reciprocal Calculation Procedure
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weighted Average
UN	United Nations (number)
cm2	square centimetres
deg C ('C)	degrees Celsius
g	gram
g/cm3	grams per cubic centimetre
g/l	grams per litre
immiscible	liquids are insoluble in each other
kg	kilogram
kg/m3	kilograms per cubic metre
ltr	Litre

millibar เบอสโ milligram mg

milligrams per 24 hours mg/24H

mg/kg milligrams per kilogram mg/m3 milligrams per cubic metre

miscible liquids form one homogeneous liquid phase regardless of the amount of either component present

mm parts per billion ppb

parts per million ppm

ppm/2h parts per million per 2 hours parts per millionper 6 hours ppm/6h

tonne tne

ug/24H micrograms per 24 hours

weight wt

Literature references:

No Data

Sources for data:

No Data



telephone: Road 97333000

Mintofacsimile:

2566 97333111

Australia New Zealand Office Sydney AdelaideAuckland Swettenham (10)2 BrisbaneChristchurch NSW +61 (0)2 Melbourne Bay Australia Www.redox.com Perth Sydney@redox.com Sydney Bay Australia Www.redox.com Sydney Ba

This MSDS summarises Redox Pty Ltd best knowledge of the health and safety hazard information of the selected substance and how to safely handle the selected substance in the workplace however Redox Pty Ltd expressly disclaims that the MSDS is a representation or guarantee of the chemcial specifications for the substance. Each user should read the MSDS and consider the information in the context of how the selected substance will be handled and used in the workplace including its use in conjunction with other substances.

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Univar USA Inc. 17425 NE Union Hill Road Redmond, WA 98052 (425) 889-3400

G-4001

For Emergency Assistance involving chemicals call - CHEMTREC (800) 424-9300

The Version Date and Number for this MSDS is: 04/13/2007 - #008

PRODUCT NAME:

ACETONE

MSDS NUMBER:

MZA0446

DATE ISSUED:

04/11/2007

SUPERSEDES:

08/04/2004

ISSUED BY:

008614

PRODUCT NAME:

ACETONE

Distributed by: Univar USA Inc. 17425 NE Union Hill Road Redmond, WA 98052 425-889-3400

ACETONE

1. PRODUCT IDENTIFICATION

SYNONYMS:

DIMETHYLKETONE; 2-PROPANONE; DIMETHYLKETAL 67-64-1

CAS NO:

67-64-1

MOLECULAR WEIGHT: 58.08

CHEMICAL FORMULA: (CH3) 2CO

Distributed by: Univar USA Inc.

17425 NE Union Hill Road

Redmond, WA 98052

425-889-3400

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS NO	PERCENT	HAZARDOUS
ACETONE	67-64-1	99 - 100%	YES

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

POTENTIAL HEALTH EFFECTS

INHALATION:

INHALATION OF VAPORS IRRITATES THE RESPIRATORY TRACT. MAY CAUSE COUGHING, DIZZINESS, DULLNESS, AND HEADACHE. HIGHER CONCENTRATIONS CAN PRODUCE CENTRAL NERVOUS SYSTEM DEPRESSION, NARCOSIS, AND UNCONSCIOUSNESS.

INGESTION:

SWALLOWING SMALL AMOUNTS IS NOT LIKELY TO PRODUCE HARMFUL EFFECTS. INGESTION OF LARGER AMOUNTS MAY PRODUCE ABDOMINAL PAIN, NAUSEA AND VOMITING. ASPIRATION INTO LUNGS CAN PRODUCE SEVERE LUNG DAMAGE AND IS A MEDICAL EMERGENCY. OTHER SYMPTOMS ARE EXPECTED TO PARALLEL INHALATION.

SKIN CONTACT:

IRRITATING DUE TO DEFATTING ACTION ON SKIN. CAUSES REDNESS, PAIN, DRYING AND CRACKING OF THE SKIN.

EYE CONTACT:

VAPORS ARE IRRITATING TO THE EYES. SPLASHES MAY CAUSE SEVERE IRRITATION, WITH STINGING, TEARING, REDNESS AND PAIN.

CHRONIC EXPOSURE:

PROLONGED OR REPEATED SKIN CONTACT MAY PRODUCE SEVERE IRRITATION OR DERMATITIS.

AGGRAVATION OF PRE-EXISTING CONDITIONS:

USE OF ALCOHOLIC BEVERAGES ENHANCES TOXIC EFFECTS. EXPOSURE MAY INCREASE THE TOXIC POTENTIAL OF CHLORINATED HYDROCARBONS, SUCH AS CHLOROFORM, TRICHLOROETHANE.

4. FIRST AID MEASURES

INHALATION:

REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. GET MEDICAL ATTENTION.

INGESTION:

ASPIRATION HAZARD. IF SWALLOWED, VOMITING MAY OCCUR SPONTANEOUSLY, BUT DO NOT INDUCE. IF VOMITING OCCURS, KEEP HEAD BELOW HIPS TO PREVENT ASPIRATION INTO LUNGS. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. CALL A PHYSICIAN IMMEDIATELY.

SKIN CONTACT:

IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. REMOVE

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CONTAMINATED CLOTHING AND SHOES. GET MEDICAL ATTENTION. WASH CLOTHING BEFORE REUSE. THOROUGHLY CLEAN SHOES BEFORE REUSE.

EYE CONTACT:

IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, LIFTING UPPER AND LOWER EYELIDS OCCASIONALLY. GET MEDICAL ATTENTION.

5. FIRE FIGHTING MEASURES

FIRE:

FLASH POINT: -20C (-4F) CC

AUTOIGNITION TEMPERATURE: 465C (869F) FLAMMABLE LIMITS IN AIR % BY VOLUME:

LEL: 2.5; UEL: 12.8

EXTREMELY FLAMMABLE LIQUID AND VAPOR! VAPOR MAY CAUSE FLASH FIRE.

EXPLOSION:

ABOVE FLASH POINT, VAPOR-AIR MIXTURES ARE EXPLOSIVE WITHIN FLAMMABLE LIMITS NOTED ABOVE. VAPORS CAN FLOW ALONG SURFACES TO DISTANT IGNITION SOURCE AND FLASH BACK. CONTACT WITH STRONG OXIDIZERS MAY CAUSE FIRE. SEALED CONTAINERS MAY RUPTURE WHEN HEATED. THIS MATERIAL MAY PRODUCE A FLOATING FIRE HAZARD. SENSITIVE TO STATIC DISCHARGE.

FIRE EXTINGUISHING MEDIA:

DRY CHEMICAL, ALCOHOL FOAM OR CARBON DIOXIDE. WATER MAY BE INEFFECTIVE. WATER SPRAY MAY BE USED TO KEEP FIRE EXPOSED CONTAINERS COOL, DILUTE SPILLS TO NONFLAMMABLE MIXTURES, PROTECT PERSONNEL ATTEMPTING TO STOP LEAK AND DISPERSE VAPORS.

SPECIAL INFORMATION:

IN THE EVENT OF A FIRE, WEAR FULL PROTECTIVE CLOTHING AND NIOSH-APPROVED SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN THE PRESSURE DEMAND OR OTHER POSITIVE PRESSURE MODE.

6. ACCIDENTAL RELEASE MEASURES

VENTILATE AREA OF LEAK OR SPILL. REMOVE ALL SOURCES OF IGNITION. WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT AS SPECIFIED IN SECTION 8.

ISOLATE HAZARD AREA. KEEP UNNECESSARY AND UNPROTECTED PERSONNEL FROM ENTERING. CONTAIN AND RECOVER LIQUID WHEN POSSIBLE. USE NON-SPARKING TOOLS AND EQUIPMENT. COLLECT LIQUID IN AN APPROPRIATE CONTAINER OR ABSORB WITH AN INERT MATERIAL (E. G., VERMICULITE, DRY SAND, EARTH), AND PLACE IN A CHEMICAL WASTE CONTAINER. DO NOT USE COMBUSTIBLE MATERIALS, SUCH AS SAW DUST. DO NOT FLUSH TO SEWER! IF A LEAK OR SPILL HAS NOT IGNITED, USE WATER SPRAY TO DISPERSE THE VAPORS, TO PROTECT PERSONNEL ATTEMPTING TO STOP LEAK, AND TO FLUSH SPILLS AWAY FROM EXPOSURES. US REGULATIONS (CERCLA) REQUIRE REPORTING SPILLS AND RELEASES TO SOIL, WATER AND AIR IN EXCESS OF REPORTABLE QUANTITIES. THE TOLL FREE NUMBER FOR THE US COAST GUARD NATIONAL RESPONSE CENTER IS (800) 424-8802.

J. T. BAKER SOLUSORB(R) SOLVENT ADSORBENT IS RECOMMENDED FOR SPILLS OF THIS PRODUCT.

7. HANDLING AND STORAGE

Page 4 of 7

PROTECT AGAINST PHYSICAL DAMAGE. STORE IN A COOL, DRY WELL-VENTILATED LOCATION, AWAY FROM ANY AREA WHERE THE FIRE HAZARD MAY BE ACUTE. OUTSIDE OR DETACHED STORAGE IS PREFERRED. SEPARATE FROM INCOMPATIBLES. CONTAINERS SHOULD BE BONDED AND GROUNDED FOR TRANSFERS TO AVOID STATIC SPARKS. STORAGE AND USE AREAS SHOULD BE NO SMOKING AREAS. USE NON-SPARKING TYPE TOOLS AND EQUIPMENT, INCLUDING EXPLOSION PROOF VENTILATION. CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTY SINCE THEY RETAIN PRODUCT RESIDUES (VAPORS, LIQUID); OBSERVE ALL WARNINGS AND PRECAUTIONS LISTED FOR THE PRODUCT.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

AIRBORNE EXPOSURE LIMITS:

ACETONE

-OSHA PERMISSIBLE EXPOSURE LIMIT (PEL): 1000 PPM (TWA)

-ACGIH THRESHOLD LIMIT VALUE (TLV): 500 PPM (TWA), 750 PPM (STEL) A4 - NOT CLASSIFIABLE AS A HUMAN CARCINOGEN

VENTILATION SYSTEM:

A SYSTEM OF LOCAL AND/OR GENERAL EXHAUST IS RECOMMENDED TO KEEP EMPLOYEE EXPOSURES BELOW THE AIRBORNE EXPOSURE LIMITS. LOCAL EXHAUST VENTILATION IS GENERALLY PREFERRED BECAUSE IT CAN CONTROL THE EMISSIONS OF THE CONTAMINANT AT ITS SOURCE, PREVENTING DISPERSION OF IT INTO THE GENERAL WORK AREA. PLEASE REFER TO THE ACGIH DOCUMENT, "INDUSTRIAL VENTILATION, A MANUAL OF RECOMMENDED PRACTICES", MOST RECENT EDITION, FOR DETAILS.

PERSONAL RESPIRATORS (NIOSH APPROVED):

IF THE EXPOSURE LIMIT IS EXCEEDED AND ENGINEERING CONTROLS ARE NOT FEASIBLE, A HALF-FACE ORGANIC VAPOR RESPIRATOR MAY BE WORN FOR UP TO TEN TIMES THE EXPOSURE LIMIT, OR THE MAXIMUM USE CONCENTRATION SPECIFIED BY THE APPROPRIATE REGULATORY AGENCY OR RESPIRATOR SUPPLIER, WHICHEVER IS LOWEST. A FULL-FACE PIECE ORGANIC VAPOR RESPIRATOR MAY BE WORN UP TO 50 TIMES THE EXPOSURE LIMIT, OR THE MAXIMUM USE CONCENTRATION SPECIFIED BY THE APPROPRIATE REGULATORY AGENCY OR RESPIRATOR SUPPLIER, WHICHEVER IS LOWEST. FOR EMERGENCIES OR INSTANCES WHERE THE EXPOSURE LEVELS ARE NOT KNOWN, USE A FULL-FACE PIECE POSITIVE-PRESSURE, AIR-SUPPLIED RESPIRATOR. WARNING: AIR-PURIFYING RESPIRATORS DO NOT PROTECT WORKERS IN OXYGEN-DEFICIENT ATMOSPHERES.

SKIN PROTECTION:

WEAR IMPERVIOUS PROTECTIVE CLOTHING, INCLUDING BOOTS, GLOVES, LAB COAT, APRON OR COVERALLS, AS APPROPRIATE, TO PREVENT SKIN CONTACT.

EYE PROTECTION:

USE CHEMICAL SAFETY GOGGLES AND/OR A FULL FACE SHIELD WHERE SPLASHING IS POSSIBLE. MAINTAIN EYE WASH FOUNTAIN AND QUICK-DRENCH FACILITIES IN WORK AREA.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:

BOILING POINT:

CLEAR, COLORLESS, VOLATILE LIQUID.

56.5C (133F) @ 760 MM HG

ODOR:

MELTING POINT:

FRAGRANT, MINT-LIKE

-95C (-139F)

SOLUBILITY:

VAPOR DENSITY (AIR=1):

MISCIBLE IN ALL PROPORTIONS IN

WATER.

VAPOR PRESSURE (MM HG):

SPECIFIC GRAVITY: 0.79 @ 20C/4C

NO INFORMATION FOUND.

400 @ 39.5C (104F)

EVAPORATION RATE (BUAC=1):

CA. 7.7

2.0

% VOLATILES BY VOLUME @ 21C (70F):

100

10. STABILITY AND REACTIVITY

STABILITY:

STABLE UNDER ORDINARY CONDITIONS OF USE AND STORAGE.

HAZARDOUS DECOMPOSITION PRODUCTS:

CARBON DIOXIDE AND CARBON MONOXIDE MAY FORM WHEN HEATED TO DECOMPOSITION.

HAZARDOUS POLYMERIZATION:

WILL NOT OCCUR.

INCOMPATIBILITIES:

CONCENTRATED NITRIC AND SULFURIC ACID MIXTURES, OXIDIZING MATERIALS, CHLOROFORM, ALKALIS, CHLORINE COMPOUNDS, ACIDS, POTASSIUM T-BUTOXIDE.

CONDITIONS TO AVOID:

HEAT, FLAMES, IGNITION SOURCES AND INCOMPATIBLES.

11. TOXICOLOGICAL INFORMATION

ORAL RAT LD50: 5800 MG/KG; INHALATION RAT LC50: 50,100MG/M3; IRRITATION EYE RABBIT, STANDARD DRAIZE, 20 MG SEVERE; INVESTIGATED AS A TUMORIGEN, MUTAGEN, REPRODUCTIVE EFFECTOR.

---NTP CARCINOGEN---

INGREDIENT KNOWN ANTICIPATED IARC CATEGORY

NO ACETONE (67-64-1) no no NONE

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:

WHEN RELEASED INTO THE SOIL, THIS MATERIAL IS EXPECTED TO READILY BIODEGRADE. WHEN RELEASED INTO THE SOIL, THIS MATERIAL IS EXPECTED TO LEACH INTO GROUNDWATER. WHEN RELEASED INTO THE SOIL, THIS MATERIAL IS EXPECTED TO QUICKLY EVAPORATE. WHEN RELEASED INTO WATER, THIS MATERIAL IS EXPECTED TO READILY BIODEGRADE. WHEN RELEASED TO WATER, THIS MATERIAL IS EXPECTED TO QUICKLY EVAPORATE. THIS MATERIAL HAS A LOG OCTANOL-WATER PARTITION

COEFFICIENT OF LESS THAN 3.0. THIS MATERIAL IS NOT EXPECTED TO SIGNIFICANTLY BIOACCUMULATE. WHEN RELEASED INTO THE AIR, THIS MATERIAL MAY BE MODERATELY DEGRADED BY REACTION WITH PHOTOCHEMICALLY PRODUCED HYDROXYL RADICALS. WHEN RELEASED INTO THE AIR, THIS MATERIAL MAY BE MODERATELY DEGRADED BY PHOTOLYSIS. WHEN RELEASED INTO THE AIR, THIS MATERIAL IS EXPECTED TO BE READILY REMOVED FROM THE ATMOSPHERE BY WET DEPOSITION.

ENVIRONMENTAL TOXICITY:

THIS MATERIAL IS NOT EXPECTED TO BE TOXIC TO AQUATIC LIFE. THE LC50/96-HOUR VALUES FOR FISH ARE OVER 100 MG/L.

13. DISPOSAL CONSIDERATIONS

WHATEVER CANNOT BE SAVED FOR RECOVERY OR RECYCLING SHOULD BE HANDLED AS HAZARDOUS WASTE AND SENT TO A RCRA APPROVED INCINERATOR OR DISPOSED IN A RCRA APPROVED WASTE FACILITY. PROCESSING, USE OR CONTAMINATION OF THIS PRODUCT MAY CHANGE THE WASTE MANAGEMENT OPTIONS. STATE AND LOCAL DISPOSAL REGULATIONS MAY DIFFER FROM FEDERAL DISPOSAL REGULATIONS.

DISPOSE OF CONTAINER AND UNUSED CONTENTS IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REQUIREMENTS.

14. TRANSPORT INFORMATION

DOMESTIC (LAND, D.O.T.)

PROPER SHIPPING NAME: ACETONE

HAZARD CLASS:

3

UN/NA:

UN1090

PACKING GROUP: II

15. REGULATORY INFORMATION

/CHEMICAL INVENTORY STATUS - PAR						
INGREDIENT			EC	JAPAN	AUSTRALIA	
ACETONE (67-64-1)		YES			YES	
/CHEMICAL INVENTORY STATUS - PART	r 2/					
INGREDIENT			DSL		PHIL.	
ACETONE (67-64-1)		YES	YES	NO	YES	
/FEDERAL, STATE & INTERNATIONAL RE						
INGREDIENT	RQ	TPQ	LIST	снем	313 ICAL CATG	
ACETONE (67-64-1)		NO				
/FEDERAL, STATE & INTERNATIONAL F	REGULATI			-		
INGREDIENT	CERCLA				-TSCA- 8 (D)	
ACETONE (67-64-1)	5000		0002	NO	NO	

CHEMICAL WEAPONS CONVENTION: NO TSCA 12(B): NO CDTA: YES SARA 311/312: ACUTE: YES CHRONIC: NO FIRE: YES PRESSURE: NO REACTIVITY: NO (PURE / LIQUID)

AUSTRALIAN HAZCHEM CODE: 21YùE POISON SCHEDULE: NONE ALLOCATED.

WHMIS: THIS MSDS HAS BEEN PREPARED ACCORDING TO THE HAZARD CRITERIA OF THE CONTROLLED PRODUCTS REGULATIONS (CPR) AND THE MSDS CONTAINS ALL OF THE INFORMATION REQUIRED BY THE CPR.

16. OTHER INFORMATION

NFPA RATINGS:

HEALTH: 1 FLAMMABILITY: 3 REACTIVITY: 0

For Additional Information:

Contact: MSDS Coordinator - Univar USA

During business hours, Pacific Time - (425) 889-3400

NOTICE

Univar USA expressly disclaims all express or implied warranties of merchantibility and fitness for a particular purpose with respect to the product or information provided herein, and shall under no circumstances be liable for incidental or consequential damages.

Do not use ingredient information and/or ingredient percentages in this MSDS as a product specification. For product specification information refer to a Product Specification Sheet and/or a Certificate of Analysis. These can be obtained from your local Univar USA Sales Office.

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Univar USA makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Univar USA's control. Therefore, users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes, and they assume all risks of their use, handling, and disposal of the product or from the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein and does not relate to its use in combination with any other material or in any other process.

END_OF MSDS

#32

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Texaco Starplex®

Product Use: Grease

Product Number(s): CPS221927, CPS221935
Synonyms: Texaco Starplex® 1, Texaco Starplex® 2

Company Identification Chevron Products Company Global Lubricants 6001 Bollinger Canyon Road San Ramon, CA 94583 United States of America

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center: Located in the USA, International collect calls accepted, (800) 231-

0623 or (510) 231-0623 Product Information

email: lubemsds@chevrontexaco.com Product Information: 800-LUBE-TEK MSDS Requests: 800-414-6737

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 95 %wt/wt
Zinc dialkyldithiophosphate	68649-42-3	1 - 5 %wt/wt

SECTION 3 HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed

Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary affects following prolongest or appreciate inhalation of oil mist at appreciate levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye; No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, apply a waterless hand cleaner, mineral oil, or petroleum jelly. Then wash with soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: (Cleveland Open Cup) 200 °C (392 °F) (Min)

Autoignition: No Data Available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames. **PROTECTION OF FIRE FIGHTERS:**

Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Clean up spills immediately, observing precautions in Exposure Controls/Personal Protection section.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Keep out of the reach of children.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Fatroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers tetain product restitue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers arould be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

Titles //www.clost.clicvron.com/msdsScrver/controller?malate camp bevin dates and 4/12/2007

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Neoprene, Nitrile Rubber, Silver Shield, Viton. Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.

Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3		
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3			

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Varies depending on specification

Physical State: Semi-solid Odor: Petroleum odor pH: Not Applicable

Vapor Pressure: <0.01 mmHg @ 20 °C (68 °F)

Vapor Density (Air = 1): >1
Boiling Point: No Data Available

Solubility: Soluble in hydrocarbon solvents; insoluble in water.

Melting Point: No Data Available

Specific Gravity: 0.9

Viscosity: 15 cSt @ 100°C (212°F) (Min) Evaporation Rate: No Data Available

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: No product toxicology data available.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

The toxicity of this material to aquatic organisms has not been evaluated. Consequently, this material should be kept out of sewage and drainage systems and all bodies of water.

ENVIRONMENTAL FATE

This material is not expected to be readily biodegradable.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING GREASE; NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

Additional information: NOT HAZARDOUS BY U.S. DOT, ADR/RID HAZARD CLASS NOT APPLICABLE.

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING GREASE; NOT REGULATED AS HAMGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING GREASE, NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: 1. Immediate (Acute) Health Effects; NO

- 🧷 2. Delayed (Cimonic) Health Effects, NO
 - 3. Fire Hazard: NO
 - 4 Sudden Release of Preseura Hazard: NO

5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1

03=EPCRA 313

01-2A=IARC Group 2A

04=CA Proposition 65

01-2B=IARC Group 2B

05=MA RTK

02=NTP Carcinogen

06=NJ RTK 07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Zinc dialkyldithiophosphate

03, 06

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), KECI (Korea), TSCA (United States).

One or more components does not comply with the following chemical inventory requirements: PICCS (Philippines).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Grease)

WHMIS CLASSIFICATION:

This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category: GREASE 1 - GRS1

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 15 Revision Date: July 26, 2006

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average			
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit			
	CAS - Chemical Abstract Service Number			
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code			
API - American Petroleum Institute	MSDS - Material Safety Data Sheet			
CVX - Chevron	NFPA - National Fire Protection Association (USA)			
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)			
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration			

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI

MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name:

ALUMINUM SULFATE

Revision Date:

02-Jan-2007

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name:

ALUMINUM SULFATE

Synonyms:

None

Chemical Family: Application:

Sulfate Additive

Manufacturer/Supplier

Halliburton Energy Services

P.O. Box 1431

Duncan, Oklahoma 73536-0431

Emergency Telephone: (281) 575-5000

Prepared By

Chemical Compliance

Telephone: 1-580-251-4335

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Aluminum sulfate	10043-01-3	60 - 100%	2 mg/m ³	2 mg/m ³

3. HAZARDS IDENTIFICATION

Hazard Overview

May cause eye, skin, and respiratory irritation.

4. FIRST AID MEASURES

Inhalation

If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation

develops or if breathing becomes difficult.

Skin

Wash with soap and water. Get medical attention if irritation persists.

Eyes

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes

and get medical attention if irritation persists.

Ingestion

Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek

medical attention. Never give anything by mouth to an unconscious person.

Notes to Physician

Not Applicable

ALUMINUM SULFATE Page 1 of 5

FIRE FIGHTING MEASURES

Flash Point/Range (F): Flash Point/Range (C):

Flash Point Method: Autoignition Temperature (F):

Autoignition Temperature (C):

Flammability Limits in Air - Lower (%): Flammability Limits in Air - Upper (%):

Not Determined Not Determined Not Determined

Not Determined

Not Determined

Not Determined

Not Determined

Fire Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Special Exposure Hazards

Decomposition in fire may produce toxic gases.

Fire-Fighters

Special Protective Equipment for Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: HMIS Ratings:

Health 2, Flammability 0, Reactivity 0 Flammability 0, Reactivity 0, Health 2

ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment. Avoid creating and breathing dust.

Environmental Precautionary

Prevent from entering sewers, waterways, or low areas.

Measures

Procedure for Cleaning /

Scoop up and remove.

Absorption

7. HANDLING AND STORAGE

Handling Precautions

Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust.

Storage Information

Store in a cool, dry location.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use in a well ventilated area.

Respiratory Protection

Not normally needed. But if significant exposures are possible then the following

respirator is recommended: Dust/mist respirator. (95%)

Hand Protection

Normal work gloves.

Skin Protection

Normal work coveralis.

Eye Protection

Wear safety glasses or goggles to protect against exposure.

Other Precautions

Eyewash fountains and safety showers must be easily accessible.

PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Color:

Solid White

Odor: pH:

Odorless 3.5

Specific Gravity @ 20 C (Water=1):

1.61

Density @ 20 C (lbs./gallon):

Not Determined

ALUMINUM SULFATE Page 2 of 5

9. PHYSICAL AND CHEMICAL PROPERTIES

Bulk Density @ 20 C (lbs/ft3): Boiling Point/Range (F):

Boiling Point/Range (C): Freezing Point/Range (F): Freezing Point/Range (C):

Vapor Pressure @ 20 C (mmHg):

Vapor Density (Air=1): Percent Volatiles:

Evaporation Rate (Butyl Acetate=1): Solubility in Water (g/100ml):

Solubility in Solvents (g/100ml): VOCs (lbs./gallon):

Viscosity, Dynamic @ 20 C (centipoise): Viscosity, Kinematic @ 20 C (centistrokes):

Partition Coefficient/n-Octanol/Water:

Molecular Weight (g/mole):

Not Determined Not Determined

Not Determined Not Determined

Not Determined Not Determined

Not Determined Not Determined

Not Determined

Soluble

Not Determined

Not Determined Not Determined

Not Determined Not Determined

342.18

10. STABILITY AND REACTIVITY

Stability Data:

Stable

Hazardous Polymerization:

Will Not Occur

Conditions to Avoid

None anticipated

Incompatibility (Materials to

Avoid)

None known.

Hazardous Decomposition

Products

Oxides of sulfur.

Additional Guidelines

Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure

Eye or skin contact, inhalation.

Inhalation

May cause respiratory irritation.

Skin Contact

May cause skin irritation.

Eye Contact

May cause eye irritation.

Ingestion

Irritation of the mouth, throat, and stomach.

Aggravated Medical Conditions

None known.

Chronic Effects/Carcinogenicity

No data available to indicate product or components present at greater than 1% are

chronic health hazards.

Other Information

None known.

Toxicity Tests

Oral Toxicity:

LD50: 6200 mg/kg (Rat)

Dermal Toxicity:

Not determined

Inhalation Toxicity:

Not determined

ALUMINUM SULFATE Page 3 of 5 **Primary Irritation Effect:**

Not determined

Carcinogenicity

Not determined

Genotoxicity:

Not determined

Reproductive /

Developmental Toxicity:

Not determined

ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)

Not determined

Persistence/Degradability

Not applicable

Bio-accumulation

Not Determined

Ecotoxicological Information

Acute Fish Toxicity:

Not determined

Acute Crustaceans Toxicity: Not determined **Acute Algae Toxicity:**

Not determined

Chemical Fate Information

Not determined

Other Information

Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method

Bury in a licensed landfill according to federal, state, and local regulations.

Contaminated Packaging

Follow all applicable national or local regulations.

TRANSPORT INFORMATION

Land Transportation

DOT

Not restricted

Canadian TDG

Not restricted

ADR Not restricted

Air Transportation

ICAO/IATA Not restricted

Sea Transportation

IMDG Not restricted

Other Shipping Information

Labels:

None

ALUMINUM SULFATE Page 4 of 5

REGULATORY INFORMATION

US Regulations

US TSCA Inventory

All components listed on inventory.

EPA SARA Title III Extremely

Hazardous Substances

Not applicable

EPA SARA (311,312) Hazard

Class

Acute Health Hazard

EPA SARA (313) Chemicals

This product does not contain a toxic chemical for routine annual "Toxic Chemical

Release Reporting" under Section 313 (40 CFR 372).

EPA CERCLA/Superfund

Reportable Spill Quantity For This

Product

Not applicable.

EPA RCRA Hazardous Waste

Classification

If product becomes a waste, it does NOT meet the criteria of a hazardous waste as

defined by the US EPA.

California Proposition 65

All components listed do not apply to the California Proposition 65 Regulation.

MA Right-to-Know Law

One or more components listed.

NJ Right-to-Know Law

One or more components listed.

PA Right-to-Know Law

One or more components listed.

Canadian Regulations

Canadian DSL Inventory

All components listed on inventory.

WHMIS Hazard Class

D2B Toxic Materials

OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS Not applicable

Additional Information

For additional information on the use of this product, contact your local Halliburton

representative.

For questions about the Material Safety Data Sheet for this or other Halliburton

products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of

the user.

END OF MSDS

ALUMINUM SULFATE Page 5 of 5



Material Safety Data Sheet

Catalog Number: 227822 Revision date: 25-Apr-2006

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY INFORMATION

404 ...

Catalog Number: 227822

Product name: ALUMINUM CHLORIDE

Synonyms: Aluminiumchlorid-hexahydrat; Aluminum chlorohydrate; Aluminum trichloride hexahydrate; Alluminio(cloruro

di); Aluminico clorido; Chlorure d'aluminium; Trichloroaluminum

Supplier:

MP Biomedicals, LLC 29525 Fountain Parkway

Solon, OH 44139 tel: 440-337-1200

Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components
ALUMINIUM CHLORIDE
HEXAHYDRATE

CAS Number 7784-13-6

Weight % 90 - 100%

ACGIH Exposure Limits: 10 mg/m³ TWA (metal dust) OSHA Exposure Limits: 15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: The product causes burns of eyes, skin and mucous membranes

Category of Danger:

Corrosive

Principle routes of exposure: Skin

Inhalation: Vapors or dusts will cause burns of respiratory passages.

Ingestion: Can burn mouth, throat, and stomach

Skin contact: Causes skin burns

Eye contact: Risk of serious damage to eyes

ANSI Classification Corrosive

Statements of hazard CAUSES BURNS TO SKIN AND EYES

VAPORS OR MISTS CAN IRRITATE OR BURN THE RESPIRATORY TRACT.

Statement of Spill or Leak - ANSI Label Eliminate all ignition sources. Absorb and/or contain spill with inert materials (e.g., sand, vermiculite). Then place in appropriate container. For large spills, use water spray to disperse vapors, flush spill area. Prevent runoff from entering waterways or sewers.

4. FIRST AID MEASURES

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Inhalation: Move to fresh air. Call a physician immediately.

Catalog Number: 227822

Product name: ALUMINUM CHLORIDE

Page 1 of 6

Skin contact: Rinse immediately with plenty of water and seek medical advice

Ingestion: Do not induce vomiting without medical advice.

Eye contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Protection of first-aiders: No information available

Medical conditions aggravated by exposure: None known

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:

Specific hazards: Unusual hazards:

Special protective equipment for firefighters:

Use dry chemical, CO2, water spray or "alcohol" foam

Burning produces irritant fumes.

None known

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent)

and full protective gear

Water mist may be used to cool closed containers.

Not determined Not determined

Specific methods:

Flash point:

Autoignition temperature:

NFPA rating:

NFPA Health: NFPA Flammability:

NFPA Flammability: NFPA Reactivity: NFPA Special Note: 0

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Environmental precautions: Methods for cleaning up:

Use personal protective equipment. Prevent product from entering drains.

Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

Storage:

ROOM TEMPERATURE

Handling:

Use only in area provided with appropriate exhaust

ventilation.

Safe handling advice: Incompatible products:

Wear personal protective equipment.

Oxidising and spontaneously flammable products

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: Breathing apparatus only if aerosol or dust is formed.

Hand protection: Pvc or other plastic material gloves

Skin and body protection: Usual safety precautions while handling the product will provide adequate protection against

this potential effect.

Eye protection: Safety glasses with side-shields

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.



9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor Catalog Number: 227822

White crystalline
Product name: ALUMINUM CHLORIDE

Page 2 of 6

MP Biomedicals, LLC

Physical state:

Formula:

Molecular weight: Melting point/range: Boiling point/range:

Density:

Vapor pressure: **Evaporation rate:** Vapor density: Solubility (in water):

Flash point: Autoignition temperature: Powder

AICI3 - 6H2O

241.4 > 285°C

No Data available at this time.

2.4 g/ml

1 hPa (at 20 C) No data available No data available

Soluble Reacts with water

Not determined Not determined

10. STABILITY AND REACTIVITY

Stability:

Polymerization:

Hazardous decomposition products:

Materials to avoid:

Stable under recommended storage conditions.

Polymerization can occur. Chloride/Hydrochloric acid Strong oxidising agents

Contact with air or water produces hydrochloric acid. Water, alcohol, alkenes cause polymerization. Incompatible with nitrobenzene, organic material, bases. Attacks metal in presence of moisture.

Conditions to avoid:

Exposure to air or moisture over prolonged periods.

11. TOXICOLOGICAL INFORMATION

Product Information

Acute toxicity Components

ALUMINIUM CHLORIDE **HEXAHYDRATE**

RTECS Number:

BD0530000

Selected LD50s and LC50s

Oral LD50 Rat: 3311 mg/kg Oral LD50 Mouse: 1990 mg/kg

Chronic toxicity:

Chronic exposure may cause nausea and vomiting, higher exposure causes

unconsciousness.

Local effects:

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and

vomiting.

Specific effects:

May include moderate to severe erythema (redness) and moderate edema (raised

skin), nausea, vomiting, headache.

Primary irritation: Carcinogenic effects: Mutagenic effects:

Reproductive toxicity: Components

No data is available on the product itself. No data is available on the product itself. No data is available on the product itself.

No data is available on the product itself. **NIOSH - Health Effects**

ALUMINIUM CHLORIDE HEXAHYDRATE

Lung changes that may lead to pulmonary fibrosis; respiratory and skin irritation

NIOSH - Target Organs respiratory system, skin, eyes; (for pyro

powders, welding fumes, soluble salts and

alkyls: respiratory system, skin)

12. ECOLOGICAL INFORMATION

Mobility:

Bioaccumulation: **Ecotoxicity effects:**

Aquatic toxicity:

No data available

No data available No data available

May cause long-term adverse effects in the aquatic

environment.

Catalog Number: 227822

Product name: ALUMINUM CHLORIDE

Page 3 of 6

MP Biomedicals, LLC

www.mpbio.com

Components

U.S. DOT - Appendix B -

Marine Pollutan

Not Listed

U.S. DOT - Appendix B -**Severe Marine Pollutants**

Not Listed

United Kingdom - The Red

List:

Not Listed

Components

HEXAHYDRATE

Germany VCI (WGK)

World Health Organization (WHO) - Drinking Water

Ecotoxicity - Fish Species

ALUMINIUM CHLORIDE **HEXAHYDRATE**

ALUMINIUM CHLORIDE

Not Listed

Not Listed

Data Not Listed

Components

Ecotoxicity - Freshwater

Ecotoxicity - Microtox Data Ecotoxicity - Water Flea

Data

ALUMINIUM CHLORIDE **HEXAHYDRATE**

Algae Data Not Listed

Not Listed

Not Listed

Components

EPA - ATSDR Priority List

EPA - HPV Challenge Program Chemical List California - Priority Toxic

ALUMINIUM CHLORIDE HEXAHYDRATE

Rank (of 275): 193

Not Listed

Pollutants Not Listed

Components

ALUMINIUM CHLORIDE **HEXAHYDRATE**

California - Priority Toxic Pollutants

Not Listed

California - Priority Toxic Pollutants

Not Listed

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished

with this material may be hazardous.

Corrosive solid, acidic, inorganic, n.o.s.

Contaminated packaging:

Do not re-use empty containers

14. TRANSPORT INFORMATION

UN/Id No:

3260

DOT:

Proper shipping name: IATA Hazard Label(s):

Corrosive

Hazard Class

8 -Corrosive materials

Packing group:

Ш

Emergency Response Guide Number (ERG):

154

Components

U.S. DOT - Appendix A Table 1 - Reportable Quantities

ALUMINIUM CHLORIDE

HEXAHYDRATE

Not Listed

TDG (Canada):

WHMIS hazard class:

corrosive material

Catalog Number: 227822

Product name: ALUMINUM CHLORIDE

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IMDG/IMO

Proper shipping name:

Corrosive solid, acidic, inorganic, n.o.s.

IMDG - Hazard Classifications

IMDG class or division = 8

IMDG - Regulated Substances

UN3260

Components

U.S. DOT - Appendix B - Marine Pollutan U.S. DOT - Appendix B - Severe Marine

Pollutants

ALUMINIUM CHLORIDE **HEXAHYDRATE**

Not Listed

Not Listed

IMO-labels:

15. REGULATORY INFORMATION

International Inventories

Components

ALUMINIUM CHLORIDE HEXAHYDRATE

Inventory - United States TSCA - Sect. 8(b)

Canada DSL Inventory List -

Australia (AICS):

Inventory - China:

EU EINECS List -

Inventory - Japan:

Korean KECL:

Philippines PICCS:

Present

Present

Present

Present

231-208-1 (anhydrous)

1-12

KE-01045

Present

U.S. regulations:

Components

ALUMINIUM CHLORIDE

ALUMINIUM CHLORIDE

HEXAHYDRATE

Not Listed

Know List:

[present]

California Proposition 65 Massachusetts Right to New Jersey Right to

Illinois - Toxic Air

Know List: sn 0057

[present]

Components

Florida substance List:

[present] (as Al)

Rhode Island Right to

Know List: Not Listed

Contaminants Not Listed

None

Connecticut - Hazardous Air

Pennsylvania Right to Know

Pollutants Not Listed

HEXAHYDRATE Components

SARA 313 Emission

reporting/Toxic Release 302 Extremely Haz of Chemicals

CERCLA/SARA - Section NTP: IARC:

ALUMINIUM CHLORIDE **HEXAHYDRATE**

form R reporting required Not Listed

for 1.0% de minimis

concentration (as Al) (fume

or dust only)

None

SARA 313 Notification:

The above is your notification as to the SARA 313 listing for this product(s) pursuant to Section 313 of Title III of the Superfund Ammendments and Reauthorization Act of

1986 and 40 CFR Part 372.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2499 (in

Washington, DC or Alaska).

Catalog Number: 227822

Product name: ALUMINUM CHLORIDE

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State Notification:

The above information is your notice as to the Right-to-Know listings of the stated product(s). Individual states will list chemicals for a variety of reasons including, but not limited to, the compounds toxicity; carcinogenic, tumorigenic and/or reproductive hazards; and the compounds environmental impact if accidentally released.

16. OTHER INFORMATION

Prepared by: Health & Safety

Disclaimer: The information and recommendations contained herein are based upon tests believed to be reliable. However, MP Biomedicals does not guarantee the accuracy or completeness NOR SHALL ANY OF THIS INFORMATION CONSTITUTE A WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE. Adjustment to conform to actual conditions of usage maybe required. MP Biomedicals assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

End of Safety Data Sheet

Catalog Number: 227822

Product name: ALUMINUM CHLORIDE



Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Trade name ALFOL® 6 Alcohol

Synonyms

1-Hexanol, Hexyl Alcohol

Manufacturer/Supplier

Sasol North America Inc.

Address 900 Threadneedle, Houston, TX 77079

Telephone CHEMTREC North America Transportation Emergency (24-hr)

CHEMTREC World Wide

(800) 424-9300 (703) 527-3887

Other Emergencies (24-hr)

(337) 494-5142

MSDS and Product Information (8:00am-4:30pm CST)

(281) 588-3491

Health and Safety Information (8:00am-4:00pm CST)

(281) 588-3492

SECTION 2 COMPOSITION AND INFORMATION ON INGREDIENTS

Components 1-Hexanol

Weight % 99.5

See Section 8 for Exposure Guidelines and Section 15 for Regulatory Classifications.

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance

Colorless Liquid

Odor

Sweet, pungent

Precautions

WARNING! COMBUSTIBLE LIQUID AND VAPOR. CAUSES EYE AND SKIN IRRITATION. Avoid contact with skin, eyes and clothing. Wash thoroughly after

handling. Keep away from heat and flame.

Environmental precautions

Do not flush into surface water or sanitary sewer system. Low toxicity to aquatic organisms such as bacteria, algae, protozoa and fish. Rapidly, readily and extensively

biodegradable.

POTENTIAL HEALTH EFFECTS

Eyes

Irritating to eyes. May cause corneal inflammation.

Skin

Prolonged skin contact may cause skin irritation and/or dermatitis. Normal care and

personal hygiene should prevent skin effects.

Version date: 01/05/2005

Version 1.6

Print date: 06/27/2006

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Inhalation Irritation of the nose and throat, dizziness, and headache.

Ingestion Depression of central nervous system can occur. Ingestion may cause gastrointestinal

irritation, nausea, vomiting and diarrhea. Aspiration (breathing) into lungs, caused while

vomiting, may result in severe pulmonary injury.

(See Section 11 for Toxicological Information)

SECTION 4 FIRST AID MEASURES

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated

clothes and shoes. When symptoms persist or in all cases of doubt seek medical advice.

Wash contaminated clothing before re-use.

Inhalation Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration.

If breathing is difficult, give oxygen. Call a physician immediately.

Ingestion If swallowed, call a physician or poison control center immediately. Do not induce

vomiting without medical advice. Never give anything by mouth to an unconscious

person.

SECTION 5 FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

Flash point 58 - 61 °C 136 - 142 °F

Autoignition 290 °C 554 °F temperature

Flammable limits in air % by volume Lower explosion limit: Approximately 1.2 %(V) Upper explosion limit: Approximately 8.0 %(V)

Fire and explosion Flash back possible over considerable distance. NFPA Class II combustible liquid.

Extinguishing media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Fire fighting Wear self-contained breathing apparatus and protective suit. Keep containers and surroundings cool with water spray.



SECTION 6 ACCIDENTAL RELEASE MEASURES

Steps to be taken in

Evacuate personnel to safe areas. Remove all sources of ignition. Contain and collect case of spill or leak spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13). Do not flush into surface water or sanitary sewer system.

Spill precautions Material can create slippery conditions.

SECTION 7 HANDLING AND STORAGE

Safe handling advice Ensure all equipment is electrically grounded before beginning transfer operations.

Storage/Transport

pressure

Ambient,

Load/Unload temperature

Ambient.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING MEASURES

Mechanical ventilation may be necessary if working with this product in enclosed areas and/or at elevated temperatures.

PERSONAL PROTECTIVE EQUIPMENT

Eyes When contact with liquid is possible, use a face shield and/or chemical splash goggles. Otherwise use safety glasses with side shields or goggles.

Skin Wear suitable protective clothing, gloves and eye/face protection.

Inhalation

Respiratory protection is normally not required except in emergencies or when conditions cause excessive airborne levels of mists or vapors. NIOSH-approved organic vapor airpurifying respirator, self-contained breathing apparatus, or air-supplied respirators where there may be potential for overexposure.

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EXPOSURE GUIDELINES

Components Exposure limit(s)

No exposure limits have been established for this product.

PEL= Permissible Exposure Limits

TLV= Threshold Limit Value EL= Excursion Limit TWA= Time Weigh

Time Weighted Average (8 hr.)

STEL= Short Term Exposure Limit (15 min.)

WEEL= Workplace Environmental Exposure Level

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance Liquid

Colour Colorless

Odour Sweet, pungent

Form Liquid

Boiling point/range 156 - 158 °C 313 - 316 °F

Vapour pressure 0.5 mm Hg @ 21 °C

Vapor density 4.5

Solubility (water) 0.59 g/100gNil.

Viscosity 5.5 cSt @ 21 °C

Melting point/range -45 °C -49 °F

Density 0.820 g/cm3 @ 15.5 °C

SECTION 10 STABILITY AND REACTIVITY

Conditions to avoid Keep away from heat and sources of ignition.

Hazardous decomposition

ion unidentified organic compounds.

products

Can react with strong oxidizers, inorganic acids, and halogens.

other materials

Incompatability with

Hazardous None.

polymerization

Version date: 01/05/2005

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Combustion products include carbon dioxide, carbon monoxide and possibly other

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SECTION 11 TOXICOLOGICAL INFORMATION

Eyes Primary irritation index (rabbit): 26.8 (Maximum score is 110.) (unwashed eyes) Primary irritation index (rabbit): 32.6 (Maximum score is 110.) (washed eyes)

Irreversible corneal damage at day 3, the last day of observation.

Skin Primary irritation index (rabbit): 5.1 (Maximum score is 8.0.)

Acute dermal LD50 (rabbit): 1,500 - 2,300 mg/kg

Inhalation Acute 1 hours (rat): > 21 mg/l All rats survived at indicated concentration.

Ingestion Acute oral LD50(rat): 3,100 - 4,900 mg/kg

CARCINOGENICITY

This product contains no carcinogenic substances.

SECTION 12 ECOLOGICAL INFORMATION

Aquatic toxicity Low toxicity to aquatic organisms such as bacteria, algae, protozoa and fish.

LC50 (P. Promelas (fathead minnow)) 96 hours 97.2 mg/l

Test Substance: 1-Hexanol

Biodegradation Rapidly, readily and extensively biodegradable.

SECTION 13 DISPOSAL CONSIDERATIONS

D001 - Ignitability (RQ 100 LB) Re-evaluation of the product may be required by the

user at the time of disposal, since the product uses, transformations, mixtures,

contamination, and spillage may change the classification.

Disposal methods Land disposal of this product is restricted. Dispose of only in accordance with local,

state, and federal regulations. Do not contaminate any lakes, streams, ponds,

groundwater or soil.

Empty containers Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO

> NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, triple-rinsed, properly bunged and

promptly returned to a drum reconditioner, or properly disposed.

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SECTION 14 TRANSPORT INFORMATION

DOT description Hexanols, 3, UN 2282, III This product is regulated as a hazardous material as defined by

the Department of Transportation (DOT).

IATA description Hexanols, 3, UN 2282, III This product is regulated as a dangerous good as defined by

ICAO/IATA for air transportation.

IMDG description Hexanols, 3, UN 2282, III This product is regulated as a dangerous good as defined by

the IMDG Code for marine transport.

SECTION 15 REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

OSHA classification

Combustible liquid, eye irritant and skin irritant.

TSCA Inventory Listing

Components CAS-No.

1-Hexanol 111-27-3

SARA 302 Status

<u>Components</u> <u>CAS-No.</u> <u>Weight %</u>

Contains no chemicals subject to SARA 302 reporting.

SARA 311/312 Classification

"Immediate (acute) health hazard", "Fire hazard"

SARA 313 Chemical

Components CAS-No. Weight %

Contains no chemicals subject to SARA 313 reporting.

CERCLA Hazardous Substance

<u>Components</u> <u>CERCLA RQ</u> <u>Weight %</u>

Contains no chemicals subject to CERCLA.



INTERNATIONAL REGULATIONS

Workplace Hazardous Materials Information System (WHMIS) Classification

Class B, Division 3: Combustible liquid.

Class D, Division 2, Subdivision B: Toxic material.

Australian Inventory of Chemical Substances (AICS) Listing

Listed on the AICS.

Japanese Minister of International Trade and Industry (MITI) Inventory Listing

Listed on MITI.

Canadian Domestic Substance List (DSL) Inventory Listing

Listed on the DSL.

European Inventory of Existing Commercial Chemical Substances (EINECS) Listing

Listed on EINECS.

Phillipines Inventory List (PICCS)

Listed on PICCS.

Korean Inventory List

Listed on the ECL.

China Inventory List

Listed on the China inventory.

STATE REGULATIONS

California Safe Drinking Water Act (Prop 65) Listing

Components

CAS-No.

Contains no chemical subject to California Prop 65.

SECTION 16 OTHER INFORMATION

HAZARD RATINGS

	<u>Health</u>	Flammability	Reactivity
HMIS	2	2	0
NFPA	1	2	0

Version date: 01/05/2005

Version 1.6

Print date: 06/27/2006

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SIGMA-ALDRICH

Material Safety Data Sheet

Version 3.1 Revision Date 05/17/2007 Print Date 08/22/2007

1. PRODUCT AND COMPANY IDENTIFICATION

Product name

Glycerol

Product Number

G9012

Brand

Sigma-Aldrich

Company

Sigma-Aldrich

3050 Spruce Street

SAINT LOUIS MO 63103

USA

Telephone

+1 800-325-5832

Fax

+1 800-325-5052

Emergency Phone #

(314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula

C3H8O3

Molecular Weight

: 92.09 g/mol

CAS-No.	EC-No.	Index-No.	Concentration [%]
Glycerol			
56-81-5	200-289-5	-	-

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Delayed target organ effects

Mild skin irritant

Mild eye irritant

Target Organs

Kidney

HMIS Classification

Health Hazard: 1

Chronic Health Hazard: *

Flammability: 1

Physical hazards: 0

NFPA Rating

Health Hazard: 1

Fire: 0

Reactivity Hazard: 1
Potential Health Effects

Inhalation

May be harmful if inhaled. May cause respiratory tract irritation.

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Skin

May be harmful if absorbed through skin. May cause skin irritation.

Eyes

May cause eye irritation.

Ingestion

May be harmful if swallowed.

4. FIRST AID MEASURES

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration

In case of skin contact

Wash off with soap and plenty of water.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point

160 °C (320 °F) - closed cup

Ignition temperature

370 °C (698 °F)

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Avoid breathing vapors, mist or gas.

Environmental precautions

Do not let product enter drains.

Methods for cleaning up

Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling

Normal measures for preventive fire protection.

Storage

Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
Glycerol	56-81-5	TWA	10 mg/m3	1994-09-01	US. American Conference of Governmental and Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004:Committees on

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					Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs)				
Remarks	TLVs) for the	Inhalable fraction. See Appendix C, paragraph A. Inhalable Particulate Mass TLVs (IPM-TLVs) for those materials that are hazardous when deposited anywhere in the respiratory tract.							
		TWA	5 mg/m3	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A				
		TWA	5 mg/m3	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A				
		TWA	15 mg/m3	1993-06-30	US. Department of Labor - Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PEL) 29 CFR 1910.1000 Air Contaminants.				
		TWA	5 mg/m3	1993-06-30	US. Department of Labor - Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PEL) 29 CFR 1910.1000 Air Contaminants.				

Personal protective equipment

Respiratory protection

Respiratory protection is not required. Where protection is desired, use multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves.

Eye protection

Safety glasses

Hygiene measures

General industrial hygiene practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form

liquid

Colour

clear

Odour

odourless

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Safety data

pН

5.5

Melting point

20 °C (68 °F)

Boiling point

182 °C (360 °F) at 26.7 hPa (20.0 mmHg)

290 °C (554 °F)

290 °C (554 °F)

Flash point

160 °C (320 °F) - closed cup

Ignition temperature

370 °C (698 °F)

Lower explosion limit

0.9 %(V)

Vapour pressure

< 0.13 hPa (< 0.10 mmHg) at 20 °C (68 °F)

Density

1.2620 g/cm3

1.2610 g/cm3

Water solubility

soluble

10. STABILITY AND REACTIVITY

Storage stability

Stable under recommended storage conditions.

Materials to avoid

Strong bases, Strong oxidizing agents

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions.

Carbon oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 12,600 mg/kg

LC50 Inhalation - rat - 1 h - > 570 mg/m3

LD50 Dermal - rabbit - > 10,000 mg/kg

Irritation and corrosion

Skin - rabbit - Mild skin irritation - 24 h

Eyes - rabbit - Mild eye irritation - 24 h

Sensitization

no data available

Chronic exposure

no data available

Signs and Symptoms of Exposure

prolonged or repeated exposure can cause:, Nausea, Headache, Vomiting

Potential Health Effects

Inhalation

May be harmful if inhaled. May cause respiratory tract irritation. May be harmful if absorbed through skin. May cause skin irritation.

Skin Eyes

May cause eye irritation.

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Ingestion

May be harmful if swallowed.

Target Organs

Kidney,

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

Toxicity to fish

LC50 - Carassius auratus (goldfish) - > 5,000 mg/l

LC50 - Pimephales promelas (fathead minnow) - 44,000 mg/l

LC50 - other fish - > 100,100 mg/l

LC50 - Oncorhynchus mykiss (rainbow trout) - 67,500 mg/l - 96 h

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS

Product

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards

Delayed target organ effects, Mild skin irritant, Mild eye irritant

TSCA Status

On TSCA Inventory

DSL Status

All components of this product are on the Canadian DSL list.

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

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Glycerol	CAS-No. 56-81-5	Revision Date 1991-07-01
Pennsylvania Right To Know Components		
	CAS-No.	Revision Date
Glycerol	56-81-5	1991-07-01
New Jersey Right To Know Components		
•	CAS-No.	Revision Date
Glycerol	56-81-5	1991-07-01

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further information

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EPAHO011000064

Redox Logo with tag line

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION

Product Name: TALL OIL FATTY ACID Other Names: FATTY ACIDS, TALL OIL

Uses: Used in coatings, metallurgical and pharmaceuticals.

Organisation

Location

Telephone

Ask For

Redox Pty Ltd

2 Swettenham Road Minto NSW 2566 Australia

02-97333000

Technical Officer

Poisons Information Centre

Westmead NSW

131126 1800-251525

2. HAZARD IDENTIFICATION

NOT Hazardous according to criteria of NOHSC

Risk Phrases

Safety Phrases

ERMA New Zealand Approval Code: No Data

HSNO Hazard Classification: No Data

This Material Safety Data Sheet may not provide exhaustive guidance for all HSNO Controls assigned to this substance. The ERMA website www.ermanz.govt.nz should be consulted for a full list of triggered controls and cited regulations

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Entity

CAS No.

Proportions (%)

TALL OIL FATTY ACID

[61790-12-3]

100

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed

Drink plenty of water. Seek medical attention.

Eye

Rinse immediately with plenty of water. Seek medical attention.

Skin

Wash off immediately with soap and water. Seek medical attention.

Inhaled

Move to fresh air. If symptoms or effects persist, seek medical attention.

Advice to Doctor

http://content.medaanline.a...

Treat symptomaucally based on individual reactions of patient and judgement of doctor.

Additional Information

Aggravated medical conditions caused by exposure

No information available on medical conditions aggravated from this product.

5. FIRE FIGHTING MEASURES

Extinguishing Media

In case of fire, appropriate extinguishing media include dry powder or foam.

Hazards from Combustion Products

No information available on combustion products.

Special protective precautions and equipment for fire fighters

Fire fighters should wear a self contained breathing apparatus and full protective clothing along with protective equipment.

Flammability Conditions

Combustible liquid.

Additional Information

Hazchem Code: N/A

6. ACCIDENTAL RELEASE MEASURES

Emergency procedures

Personnel involved in the clean up should wear full protective clothing. Eliminate all sources of ignition. Increase ventilation. Avoid walking through spilled product as it may be slippery. Do NOT let product reach drains or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Authority. Use spark-proof equipment.

Methods and materials for containment and clean up

Soak up spilled product using absorbent non-combustible material such as sand or soil. Avoid using sawdust or cellulose. When saturated, collect material into suitable, labelled, dry, sealable containers and hold for safe disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibles

Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiences such as damage or leaks. Protect against physical damage. Store away from incompatible materials. Take precautionary measures against static discharges.

Container Type

Iron drums tightly closed with inner coating with plastic.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

National Exposure Standards

No exposure standard has been established for this product by the Australian National Occupational Health and Safety Commission (NOHSC). However, the exposure standard for dust not otherwise specified is 10mg/m3 (for inspirable dust) and 3mg/m3 (for respirable dust).

Biological Limit Values

No information available on biological limit values for this product.

Engineering Controls

Ensure adequate antilation system, especially in confined areas.

Personal Protection

RESPIRATOR: Wear an effective dust mask. EYES: Safety glasses. HANDS: Gloves. CLOTHING: Lightweight protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance Yellow to brown liquid

Formula Unspecified.
Odour odourless
Vapour Pressure Not Applicable
Vapour Density Not Applicable
Boiling Point N/A deg C
Melting Point 218'C deg C
Solubility in water Insoluble

 Specific Gravity
 N/A (Water = 1)

 Flash Point
 Open Cup 196'C

pH 5()

Flammability Limits (as percentage volume in air)

Lower Explosion Limit Not A

 Lower Explosion Limit
 Not Applicable

 Upper Explosion Limit
 Not Applicable

 Ignition Temperature
 Not Applicable

 Specific Heat Value
 Not Applicable

 Particle Size
 Not Applicable

 Valuation Companies Compounds (VCC) content
 Not Applicable

Volatile Organic Compounds (VOC) contentNot ApplicableEvaporation RateNot ApplicableViscosityNot ApplicablePercent VolatileNo DataOctanol/Water partition coefficientNot ApplicableSaturated Vapour ConcentrationNot Applicable

Additional Characteristics

Flame Propagation/Burning Rate of Solid Materials

Not Applicable

Not Applicable

Properties of materials that may initiate or contribute to fire intensity

Not Applicable

Potential for Dust Explosion Not applicable. Product is a liquid.

Reactions that Release Flammable Gases

Fast or Intensely Burning Characteristics

Non-flammables that could contribute unusual hazards to a fire

Release of invisible flammable vapours and gases

Decomposition Temperature

No Data

Additional Information

Solubility: Soluble in alcohol and methyl-alcohol.

10. STABILITY AND REACTIVITY

Chemical Stability: Product is stable under normal conditions of use and storage.

Conditions to avoid: Avoid excessive heat, static discharges and high temperatures.

Incompatible Materials: Avoid oxidizing agents and ignition sources.

Hazardous Decomposition Products: Carbon monoxide and carbon dioxide.

Hazardous Reactions: Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicity Data

No toxicological information available for this product.

Health Effects - Acute

http://opetant.modocaling.com/datacete.mdts/TAOIEA Ltm./g.ct.ox (40/E/0000 E.04 4E DER

Redox Pty Ltd nterial Safety Data Sheet TAOIFA Swallowed No information available. Eye No information available. Skin No information available. Inhaled No information available. 12. ECOLOGICAL INFORMATION **Ecotoxicity:** No Data Persistence and degradability: No persistence/degradability information available on this product. Mobility: No information available on mobility for this product. **Additional information** Environmental fate (exposure): No information available on environmental fate for this product. Bioaccumulative potential: No information available on bioaccumulation for this product. 13. DISPOSAL CONSIDERATIONS Disposal Dispose of in accordance with all local, state and federal regulations. Special Precautions for land fill or incineration Contact a specialist disposal company or the local waste regulator for advice. 14. TRANSPORT INFORMATION UN No. Not Allocated **Shipping Name Dangerous Goods Class** Subsidiary Risk TALL OIL FATTY ACID Pack Group C.2 **Precaustion for User** Hazchem Code None Allocated None Allocated No Data N/A

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15. REGULATORY INFORMATION

Poisons Scheume N/A EPG N/A

AICS Name FATTY ACIDS, TALL OIL

NZ Toxic Substance

FATTY ACIDS, TALL O

Additional information No Data

16. OTHER INFORMATION

Revision Date: May 2006

Additional information

Legend to abbreviations and acronyms:

< less than > greater than

AICS Australian Inventory of Chemical Substances
CAS Chemical Abstracts Service (Registry Number)

CO2 Carbon Dioxide

COD Chemical Oxygen Demand

ERMA Environmental Risk Management Authority
HSNO Hazardous Substance and New Organism
IDLH Immediately Dangerous to Life and Health

LC50 LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.

LD stands for "Lethal Dose". LD50 is the amount of a material, given all at once, which causes the death of 50% (one half)

of a group of test animals

Misc miscible N/A Not Applicable

LD50

NIOSH National Institute for Occupational Safety and Health
NOHSC National Occupational Health and Safety Commission
OECD Organization for Economic Co-operation and Development

PEL Permissible Exposure Limit
RCP Reciprocal Calculation Procedure
STEL Short Term Exposure Limit
TLV Threshold Limit Value

TWA Time Weighted Average UN United Nations (number) cm2 square centimetres

deg C ('C) degrees Celsius

g gram

g/cm3 grams per cubic centimetre

q/I grams per litre

immiscible liquids are insoluble in each other

kg kilogram

kg/m3 kilograms per cubic metre

Itr Litre
m3 cubic metre
mbar millibar
mg milligram

mg/24H milligrams per 24 hours
mg/kg milligrams per kilogram
mg/m3 milligrams per cubic metre

miscible liquids form one homogeneous liquid phase regardless of the amount of either component present

mm millimetre
ppb parts per billion
ppm parts per million

ppm/2h parts per million per 2 hours ppm/6h parts per millionper 6 hours

tne tonne

ug/24H micrograms per 24 hours

aterial Safety Data Sheet TAOIFA Redox Ptv Ltd

wt

Literature references:

No Data

Sources for data:

No Data



Australia New Sydney Zealand Office

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Melbourne Hawkes Australia www.redox.com Perth sydney@redox.com Sydney

This MSDS summarises Redox Pty Ltd best knowledge of the health and safety hazard information of the selected substance and how to safely handle the selected substance in the workplace however Redox Pty Ltd expressly disclaims that the MSDS is a representation or guarantee of the chemcial specifications for the substance. Each user should read the MSDS and consider the information in the context of how the selected substance will be handled and used in the workplace including its use in conjunction with other substances.

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MSDS No. MI 160

Revision: 0



Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Petroleum distillate/fuel blendstock

Chemical Formula: Mixture CAS Number: Mixture

Synonyms:

General Use: fuel blendstock

Manufacturer: KMCO, LP 16503 Ramsey Road, Crosby, Texas 77532, Phone (281) 328-3501, FAX (281) 328-9528

24-HOUR EMERGENCY NUMBER: CHEMTREC 1-800-424-9300

Section 2 - Compo	sition/Information	on Hazardous Ingredients	
Ingredient Name	*	CAS Number	% wt <i>or</i> % vol
Ethanol	<u> </u>	64-17-5	0-90%
Toluene		108-88-3	0 - 90 %
Petroleum distillates (lube, mineral oil), (naptha)	8002-05-9	0 - 90 %
Mixed xylenes		1330-20-7	0-90%
Water	• "		0-50%

•	OSH	IA PEL	ACG	IH TLV	NIOS	H REL	NIOSH
Ingredient	TWA	STEL	TWA	STEL	TWA	STEL	IDLH
Ethanol	1000 ppm	None estab	1000 ppm	None estab	1000 ppm	None estab	3300 ppm
Petroleum distillate	500 ppm	None estab					
Xylene	100 ppm	None estab	100 ppm	150 ppm	100 ppm	150 ppm	None estab
Toluene	100 ppm	None estab	1090 ppm	None estab	100 ppm	None estab	500 ppm
Water	None estab						

Section 3 = Hazards Identification

☆☆☆☆ Emergency Verview☆☆☆☆ FOR INDUSTRIAL USE ONLY

HMIS H 2 F 3 R 0

Potential Health Effects

Acute Effects

Inhalation: Vapors can be irritating to eyes, nose and respiratory tract.

Eye: May be mildly irritating to the eyes.

Skin: Liquid is moderately irritating to the skin and could cause dry skin and dermatitis.

Ingestion: Moderately toxic. Can cause CNS depression, nausea, dizziness, vomiting and unconsciousness.

Carcinogenicity:

Medical Conditions Aggravated by Long-Term Exposure: May aggravate an existing dermatitis, throat or respiratory

condition.

Chronic Effects: No adverse effects anticipated from available information.

Section 4 - First Aid Measures

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. Get medical attention.

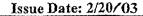
Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, Get medical attention.

Skin Contact: Remove contaminated clothing and wash affected skin area thoroughly with soap and water. If skin irritation develops or persists, seek medical attention. Dispose of contaminated clothing in compliance with Federal, State, and local regulations.

Ingestion: Induce vomiting. Get medical attention.

After first aid, get appropriate in-plant, paramedic, or community medical support.

MATERIAL SAFETY DATA SHEET



NFPA



rocedures:

Section 5 - Fire-Fighting Measures

Flash Point: 80 - 140 °F Flash Point Method:

Burning Rate: Not Determined

Autoignition Temperature: Not Determined.

LEL: Not Determined.
UEL: Not Determined.

Flammability Classification: Severe fire hazard when exposed to heat or flame Extinguishing Media: Foam, Dry Chemical, Carbon Dioxide, Water Fog

Unusual Fire or Explosion Hazards: Dangerous when exposed to heat or flame. Can react with oxidizing materials.

Hazardous Combustion Products: Carbon monoxide, carbon dioxide, and unidentified organic compounds

Fire-Fighting Instructions:. Use waterspray to cool surfaces. Do not use direct water stream to extinguish fires. Product may travel with water and reignite.

Fire-Fighting Equipment: Wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in pressure demand or other positive pressure mode.

Section 6 - Accidental Release Measures

Spill /Leak Procedures: Remove all ignition sources, safely shut of source and contain spilled material. Use protective equipment in emergency and cleanup situations. Restrict water use during cleanup.

Small Spills: Contain with inert absorbent.

Large Spills

Containment: Use explosion proof pump to recover liquid. Spilled material and contaminated water or soil may be hazardous to human or other life forms.

Cleanup: Spilled material becomes a hazardous waste. Material must be disposed of in accordance with all Federal, State, and Local regulations.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

Section 7 = Handling and Storage

Handling Precautions: Handle material in a well-ventilated area to minimize potential exposure hazard.

Storage Requirements: Store out of direct sunlight and in a cool well-ventilated area.

Regulatory Requirements:

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Controls should be such that adequate ventilation is provided.

Ventilation: Provide general or local exhaust ventilation systems. Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Administrative Controls: Normal industrial requirements should be in place.

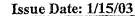
Respiratory Protection: Air-purifying respirator can be used in a well-ventilated environment where exposure above PEL/TLV is unlikely. If working in an enclosed area approved supplied air or self-contained breathing apparatus (SCBA) should be used.

Protective Clothing/Equipment: Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area. Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

lomments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

MATERIAL SAFETY DATA SHEET





Section 9 - Physical and Chemical Properties

State: Liquid

Appearance and Odor: Liquid with typical odor

Odor Threshold: Not determined Vapor Pressure: 0.01-2.5 @ 20°C Vapor Density (Air=1): Not determined Formula Weight: Not applicable - mixture

Density: 6.7 - 9.0 lbs/gallon

Specific Gravity (H2O=1, at 20/20 °C): 0.8 - 1.1 @ 25°C

pH: Not determined

Water Solubility: Not determined Other Solubilities: Not determined

Boiling Point: 100 - 200 @ 220 MM Hg, typical

Freezing/Melting Point: approx. - 40°C

Viscosity: 1 - 15 st @ 40°C
Refractive Index: Not determined
Surface Tension: Not determined
% Volatile: Not determined

Evaporation Rate (BuAc=1): Not Determined

Section 10 - Stability and Reactivity

Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Polymerization: Will not occur.

Chemical Incompatibilities: Strong oxidizing agents, strong bases Conditions to Avoid: Heat and flame, ignition sources, imcompatabilities

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, steam and other unidentified organics.

Section I I - Toxicological Information

Toxicity Data:*

Eve Effects: Mildly to severely irritating to eyes

Skin Effects: Mildly irritating to skin

Inhalation: Can cause headache, drowsiness,

Fatigue

Ingestion: Can cause liver and kidney damage

Acute Inhalation Effects: Can cause liver and kidney damage Acute Oral Effects: Can cause liver and kidney damage

Chronic Effects: Repeated small exposure via any means can cause

severe kidney problems. Skin allergy can develop.

Carcinogenicity: Not classifiable as a human carcinogen

Mutagenicity: Teratogenicity:

Section 12 - Ecological Information

Ecotoxicity: Data not available.

Environmental Fate: Data not available.
Environmental Degradation: Data not available.
Soil Absorption/Mobility: Data not available.

Section 13 - Disposal Considerations

Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.

Disposal Regulatory Requirements: Consult current Federal, state, and local regulations.

Container Cleaning and Disposal: Dispose of container and unused contents in accordance with Federal, state, and local requirements.

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101):

Shipping Name: Flammable, liquid, n.o.s. (contains petroleum

distillate)

Shipping Symbols: Hazard Class: 3

ID No.: NA 1993
Packing Group: 3
Label: Flammable Liquid
Special Provisions (172.102):

Packaging Authorizations

a) Exceptions:

b) Non-bulk Packaging:

c) Bulk Packaging:

Quantity Limitations

a) Passenger, Aircraft, or Railcar:

b) Cargo Aircraft Only:

Vessel Stowage Requirements

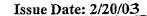
a) Vessel Stowage:

b) Other:

MATERIAL SAFETY DATA SHEET

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^{*} See NIOSH, RTECS, for additional toxicity data.





Section 15 - Regulatory Information

SEPCLA Populable Quantity (RQ): Toluene-1000 lbs. Mixed xylenes - 100 lbs.

SARA 311/312 Codes: Toluene, Xylene SARA Toxic Chemical (40 CFR 372.65):

SARA EHS (Extremely Hazardous Substance) (40 CFR 355):.

OSHA Regulations:

Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): Xylene

OSHA Specifically Regulated Substance (29CFR 1910):

Section 16 - Other Information

Prepared By: KMCO,LP. Revision Notes: New MSDS.

Additional Hazard Rating Systems: None

Disclaimer: This product is FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN. DO NOT TAKE INTERNALLY.

KMCO, LP. believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. No warranty of fitness for any particular purpose, warranty of merchantability, or any other warranty expressed or implied, is made concerning the information provided herein. The information provided herein relates only to the specific product designated and may not be valid where such product is used in combination with any other materials or in any process. Further, since the conditions and methods of use of the product and of the information referred to herein are beyond the control of KMCO, LP., KMCO, LP. expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information.

For additional product information, please contact the KMCO, LP., Sales Office at 281-885-1234.

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MATERIAL SAFETY DATA SHEET



Material Safety Data Sheet

From: Mallinckrodt Baker, Inc. 222 Red School Lane Phillipsburg, NJ 08865





24 Hour Emergency Telephone: 908-859-2151

CHEMTREC: 1-800-424-9300

National Response in Canada CANUTEC: 613-996-6666

Outside U.S. and Canada Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

FERRIC NITRATE

Product Identification

Synonyms:

Nitric acid, iron (3+) salt nonahydrate; iron nitrate nonahydrate; iron trinitrate

CAS No:

10421-48-4 (Anhydrous) 7782-61-8 (Nonahydrate)

Molecular Weight: 404.00

Chemical Formula: Fe(NO...)...9H,O

Product Codes:

J.T. Baker:

2018

Mallinckrodt: 5032, 5657

2. Composition/Information on Ingredients

Ingredient

CAS No.

Percent

Hazardous

Ferric Nitrate

10421-48-4

90 - 100%

Yes

3. **Hazards Identification**

Emergency Overview

DANGER! OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS THE LIVER.

J.T. Baker SAF-T-DATA ™ Ratings

(Provided here for your convenience)

Health:

Flammability:

Reactivity:

Contact:

2 - Moderate

0 - None

3 - Severe (Oxidizer)

2 - Moderate

Lab Protection Equip:

GOGGLES; LAB COAT; PROPER GLOVES

Storage Color Code:

Yellow (Reactive)

Potential Health Effects

Inhalation:

Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.

Page 1 of 5

Ingestion:

Causes irritation to the gastrointestinal tract. Repeated large doses can cause excess iron buildup in the body. Symptoms include gastrointestinal irritation, with abdominal cramps, vomiting, diarrhea, black stool and liver damage.

Skin Contact:

Causes irritation to skin. Symptoms include redness, itching, and pain.

Eye Contact:

Causes irritation, redness, and pain. Prolonged contact may cause a brownish discoloration to the eye.

Chronic Exposure:

Under some circumstances methemoglobinemia occurs in individuals when the nitrate is converted by bacteria in the stomach to nitrite. Chronic exposure may cause liver effects.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney or respiratory function may be more susceptible to the effects of the substance.

4. First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact

Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:

Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Fire may produce poisonous or irritating gases.

Explosion

Contact with oxidizable substances may cause extremely violent combustion. Sealed containers may rupture when heated. Sensitive to mechanical impact.

Fire Extinguishing Media:

Dry chemical, foam, carbon dioxide, or water spray.

Special Information:

Wear full protective clothing and breathing equipment for high-intensity fire or potential explosion conditions.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. Handling and Storage

Page 2 of 5

Effective Date: 11/10/2005 Supercedes: 2/18/2003

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Separate from combustibles, organic or other readily oxidizable materials. Avoid storage on wood floors. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits

-ACGIH Threshold Limit Value (TLV):

1 mg/mu (TWA) soluble iron salt as Fe

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Personal Respirator (NIOSH Approved)

If the exposure limit is exceeded and engineering controls are not feasible, a full facepiece particulate respirator (NIOSH type N100 filters) may be worn for up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids. glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear protective gloves and clean body-covering clothing.

Eye Protection:

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

Violet crystals.

Odor:

Slight nitric acid odor.

Solubility:

Freely soluble.

Specific Gravity:

1.684

pH:

No information found.

% Volatiles by volume @ 21°C (70°F)

0

Boiling Point:

< 100°C (< 212°F) Decomposes.

Melting Point:

47.2°C (117°F)

Vapor Density (Air=1):

No information found.

Vapor Pressure (mm Hg):

No information found.

Evaporation Rate (BuAc=1):

No information found.

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products

Emits nitrous oxides when heated to decomposition.

Hazardous Polymerization:

Will not occur.

Page 3 of 5

Incompatabilities:

Substance may react violently with some organic compounds or reducing agents.

Conditions to Avoid:

Heat, shock, friction, incompatibles.

11. Toxicological Information

Oral rat LD50: 3250 mg/kg

Cancer Lists

Ingredient

Ferric Nitrate (10421-48-4)

---NTP Carcinogen---

Known Anticipated

ed IARC Category

o No

None

12. Ecological Information

Environmental Fate:

No information found.

Environmental Toxicity:

No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations.

Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name:

FERRIC NITRATE

Hazard Class:

5.1 UN1466

Packing Group: Ill

Information reported for product/size:

12KG

International (Water, I.M.O.)

Proper Shipping Name:

FERRIC NITRATE

Hazard Class:

5.1

UN/NA:

UN/NA:

UN1466

Packing Group:

Information reported for product/size:

12KG

15. Regulatory Information

Chemical Inventory Status					-		···	
						Can	ada	
Ingredient	TSCA	EC	Japan	Australia	Korea	DSL	NDSL	Phil.
Ferric Nitrate (10421-48-4)	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Federal, State & International	Regulations				***********			
	SAR	A 302	*****	-SARA 313-	*********		-RCRA-	-TSCA-
Ingredient	RQ	TPQ	List	Chemica	I Catg.	CERCLA	261.33	8(d)
Ferric Nitrate (10421-48-4)	No	No	No	Nitrate	Cmpd.	1000	No	No

Page 4 of 5

Effective Date: 11/10/2005 Supercedes: 2/18/2003

Chemical Weapons Convention: No

TSCA 12(b): No

CDTA: No

SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No Reactivity: Yes

(Mixture / Solid)

Australian Hazchem Code 1[T]

Australian Poison Schedule: None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings:

Health: 1 Flammability: 0 Reactivity: 1 Other: Oxidizer

Label Hazard Warning:

DANGER! OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS THE LIVER.

Label Precautions:

Avoid contact with eyes, skin and clothing.

Avoid breathing dust.

Keep from contact with clothing and other combustible materials.

Wash thoroughly after handling.

Store in a tightly closed container.

Use only with adequate ventilation.

Remove and wash contaminated clothing promptly.

Label First Aid:

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air, If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. In all cases, get medical attention.

Product Use:

Laboratory Reagent.

Revision Information:

No changes.

Disclaimer:

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Prepared By Environmental Health & Safety

Phone Number: (314) 654-1600 (U.S.A.)

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EPAHO011000079

ALDON 221 Rochester Street Avon, New York 14414-9409

MATERIAL SAFETY DATA SHEET

MSDS No.:

RROOSO

R L D O N	CORPO		85) 226-6177	14-5409	MSDS No.: Effective D	
SECTIO	NI	NAME		24 HOUR	REMERG	ENCY ASSISTANCE
Product	Fertilizer				CHEM ²	TREC
Chemical Synonyms	Plant Nutrie	nt		$1 \times $	800-42	
Formula	Mixture. Se	e Section II.		- NFP	,	Reactivity 0
Unit Size	up to 1 Kg.			HAZARE	RATING	HMIS *
C.A.S. No.	Mixture. Se			0		PERATE SERIOUS SEVERE 2 3 4
SECTIO	N II	INGRE	DIENTS OF	MIXTUR		
Principal C	component(s)			%	TLV Units
Contains:	Ammonium ph	osphate: (CAS 77	22-76-1)			None established.
	Potassium nitra	ate: (CAS 7757-79	9-1)			None established.
	Urea: (CAS 5	7-13-6)				None established.
	CAUTION! MA	AY BE HARMFUL	IF SWALLOWE).		
SECTIO		PHYSIC	CAL DATA			
Melting Poin		N/A		Specific Gravity		N/A
Boiling Poin	```	N/A		Percent Volatile by Volume (%) Evaporation Ra		N/A
Vapor Press	ure (mm Hg)	N/A		(=1)		N/A
Vapor Dens		N/A				
Solubility in		Complete.				
Appearance			e solid; no odor.		7400 0	A.T.A
SECTIO Flash Point	IN IV	FIRE A	ND EXPLO		ZARU U	Lower Upper
(Method Used)	Non-fi	ammable.	% by Volun			
Extinguisher Media	Use a	ny media suitable f	or extinguishing :	supporting fire	e.	
SPECIAL F	IREFIGHTIN	G	!			
			re conditions, we athing apparatus		MSHA-appro	ved self-contained
UNUSUAL EXPLOSIO	FIRE AND N HAZARDS					
			or excessive he ducts.	at may produ	ce hazardou	s decomposition

SECTIO				EAL	TH HAZAR	D	DATA			RŘ⊌		
Threshold	Limit	ed V	alue No	one est	ablished for thi	s ma	aterial or if	s compor	nents.	. (ACGIH 200 ⁻	i).	
Effects of	Overe	xpos	S;	ay cau	data is not avai se irritation. Ex Target organs	erci	se approp	riate proc				
with water f <u>SKIN</u> : Ren medical atte difficult, give	mouth to at least nove correction. It experies the oxyger	o an u st 15 i itamin NHAL	nconscious minutes, lift ated clothir ATION: R	omiting s perso ing upp ng. Flu emove	ION: Call physonly if advised in. EYES: Che per and lower each thoroughly to fresh air. If	by a ck fo yelid vith o	appropriate or and ren Is occasio mild soap	e medical nove cont nally. Ge and wate	pers act le t imm r. If i	onnel. Never of enses. Flush the nediate medica irritation occurs	give nord I att	ughly ention. et
SECTIO	N VI		R		TIVITY DA							
Stability	Unsta			Con	ditions to A	vo	id	Excess	ive te	emperature and	l he	at
	Stab	e	X	L						ATT POTALOTO GITE		···
Incompati (Materials		oid)	None	known								
Hazardous Decompos		Prod	lucts		hermal decomp hosphorous, ar			ning may	prod	uce oxides of r	itro	gen and
Hazardous	Polym	eriza	tion	Con	ditions to A	vo	id					
May Occur	r V	Vill No	ot Occur				1	Not a	nnlica	hle		
		;	X					1101 0	phoc	iD(C.		
SECTIO Steps to b material is	e take		case	T		or us	e if not co	ntaminate	ed. S	weep up and p Wash spill are		
Waste Dis	posal	Meti			treatment, or dis							nly.
			Di	spose	of in accordance	e wi	th all Fede	eral, State	and	Local regulation	ns.	·
SECTIO	M VIU			PEC	AL PROT	EC	TIONL	MEOR	MΔ.	TION		نصيا
Respiration Pr (Specify Type)	otection		None need	ed in n	ormal laborato proved respirat	y ha					ır a	
Ventilatio	n Lo	cal Ex	haust	I	Recommende	d.	Special		No).		
) M		cal (General	Ц	Recommende		Other	L	No	·		
Protective	Glove	es	Rub	ber.		E	e Prote	ection	L	Chemical safe	ety (lasses.
Other Protectiv Equipment		Lab	coat, eye v									
SECTIO				PEC	IAL PREC	ΑU	TIONS					
Precautions in Handling Keep container tight	& Stori	ng		tore in	a cool, dry plac	ce. \	Nash thor	oughly af	ter ha	andling.		
Other Preca	utions	Read For la	label on containe boratory use only	er before u y. Not for	using. Do not wear con drug, food or househo	ntact le ld use	nses when wo Keep out of	rking with che each of childre	micals. en.			
		Do	not take inf	ternally	. Remove and	was	sh contam	inated clo	thing	j.		
Revision N	lo. 3	Da	nte 03/2	1/05	Approved		Michael	Paszeia		Chemical Safety		MR
		_100	110 00/2	7/00	hubbiosed		MICHAEL	rastola		Coordinator		A11./

The Information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of sullability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. Heardous Materials industrial Standards. Printed on recycled paper.

FUEL OIL MATERIAL SAFETY DATA SHEET FOR USA AND CANADA



SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:

FUEL OIL

SYNONYMS:

Used oil fuel.

PRODUCT CODE:

Prefix 07FO

PRODUCT USE:

Fuel oil for industrial boilers. If this product is used in combination with

other products, refer to the Material Safety Data Sheet for those

products.

This number is for emergency use only. If you desire non-emergency product information, please call a phone number listed below.

24-HOUR EMERGENCY PHONE NUMBER MEDICAL AND TRANSPORTATION (SPILL):

1-800-468-1760

SUPPLIER:

Safety-Kleen Systems, Inc.

5400 Legacy Drive Cluster II, Building 3 Plano. Texas 75024

USA

1-800-669-5740

www.Safety-Kleen.com

TECHNICAL INFORMATION: 1-800-669-5740 Press 1 then 1, then Extension 7500

MSDS FORM NUMBER: 82430

ISSUE: May 10, 2006

ORIGINAL ISSUE: October 31,1998

SUPERSEDES: January 23, 2003

PREPARED BY: Product MSDS Coordinator

· APPROVED BY: MSDS Task Force

Revision 05/06; MSDS Form No. 82430 - Page 1 of 12

FUEL OIL MATERIAL SAFETY DATA SHEET FOR USA AND CANADA

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

				<u>OSHA F</u>	<u> EL**</u>	ACG	<u>IH TLV®</u>		
WT%	NAME	SYNONYM	<u>CAS</u> NO.	<u>AWT</u>	STEL	TWA	STEL	<u>LD</u> a	<u> </u>
65 to 100*	Used oil	N.Av.	N.Av.	mg/m ³ 5°	N.Av.	mg/m ³ 5°	mg/m ³ 10°	N.Av.	N.Av.
0 to 25*	Water/Solids	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.
0 to 10*	Hydrocarbon solvents. May include gasoline, diesel fuel, jet fuel, mineral spirits, etc.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.
0 to 1.5*	Metals. May include lead, iron, zinc, copper, chromium, arsenic, nickel, and others: each below 1.0 WT%.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.
0 to 1.0*	Polynuclear aromatics. May include naphthalene, fluoranthene, phenanthrene, pyrene, and others: each below 0.3 WT%.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.

^{*}Even though the concentration range does not fall under the ranges prescribed by WHMIS, this is the actual range which varies with each batch of the product. N. Av. = Not Available Oral-Rat LD₅₀

blinhalation-Rat LC₅0 Based on Stoddard Solvent

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE

Thick black, viscous liquid with a petroleum odor.

WARNING!

PHYSICAL HAZARDS

Combustible liquid and vapor.

HEALTH HAZARDS

May be harmful if inhaled.

May be harmful if swallowed.

May be harmful if absorbed through the skin.

May irritate the respiratory tract (nose, throat, and lungs), eyes, and skin.

May cause skin sensitization.

Suspect cancer hazard. Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.

Contains material which can cause birth defects.

Contains material which can cause central nervous system damage.

ENVIRONMENTAL HAZARDS

Components may be harmful to aquatic life.

POTENTIAL HEALTH EFFECTS

INHALATION

High concentrations of vapor may be harmful if inhaled. High concentrations of (BREATHING): vapor or mist may irritate the respiratory tract (nose, throat, and lungs). High concentrations of vapor or mist may cause nausea, vomiting, headaches,

dizziness, loss of coordination, numbness, and other central nervous system effects. Massive acute overexposure may cause rapid central nervous system

depression, sudden collapse, coma, and/or death.

EYES:

May cause irritation.

SKIN:

May cause skin sensitization. May cause irritation. May be absorbed through

the skin and cause harm as noted under INHALATION (BREATHING).

INGESTION (SWALLOWING): May be harmful if swallowed. May cause throat irritation, nausea, vomiting,

and central nervous system effects as noted under INHALATION (BREATHING). Breathing product into the lungs during ingestion or

vomiting may cause lung injury and possible death.

Revision 05/06; MSDS Form No. 82430 - Page 3 of 12

MEDICAL CONDITIONS AGGRAVATED BY **EXPOSURE:**

Individuals with pre-existing respiratory tract (nose, throat, and lungs), central nervous system, kidney, eye, and/or skin disorders may have increased susceptibility to the effects of exposure.

CHRONIC:

Prolonged or repeated inhalation may cause toxic effects as noted under INHALATION (BREATHING). Prolonged or repeated exposure may cause oil pneumonia, lung tissue inflammation, fibrous tissue formation, and central nervous system, liver and kidney damage, and may cause mutagenicity, reproductive toxicity, teratogenicity and birth defects. Prolonged or repeated eye contact may cause inflammation of the membrane lining the eyelids and covering the eyeball (conjunctivitis). Prolonged or repeated skin contact may cause drying, cracking, redness, itching, and/or swelling (dermatitis).

CANCER

This product contains mineral oils, untreated or mildly treated, which can INFORMATION: cause cancer. This product may contain hydrocarbon and chlorinated solvents, metals, and polynuclear aromatics which can cause cancer. Risk of cancer depends on duration and level of exposure. For more information, see SECTION 11: CARCINOGENICITY. Also see SECTION 15: CALIFORNIA.

POTENTIAL ENVIRONMENTAL EFFECTS

Components may be toxic to aquatic life. Also see SECTION 12: ECOLOGICAL INFORMATION.

SECTION 4: FIRST AID MEASURES

INHALATION (BREATHING):

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Oxygen should only be administered by qualified personnel. Someone should stay with victim. Get medical attention if breathing difficulty persists.

EYES:

If irritation or redness from exposure to vapor develops, move away from exposure into fresh air. Upon contact, immediately flush eyes with plenty of lukewarm water, holding eyelids apart, for 15 minutes. Get medical attention.

SKIN:

Remove affected clothing and shoes. Wash skin thoroughly with soap and water. Get medical attention if irritation or pain develops or persists. Wash contaminated clothing before reuse.

INGESTION (SWALLOWING):

Do NOT induce vomiting. Immediately get medical attention. Call 1-800-468-1760 for additional information. If spontaneous vomiting occurs, keep head below hips to avoid breathing the product into the lungs. Never give anything by mouth to an unconscious person.

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FUEL OIL

MATERIAL SAFETY DATA SHEET FOR USA AND CANADA

NOTE TO PHYSICIANS:

Treat symptomatically and supportively. Treatment may vary with condition of victim and specifics of incident. Call 1-800-468-1760 for

additional information.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT:

180°F (82°C) Closed Cup

FLAMMABLE LIMITS IN AIR:

LOWER: Not available

UPPER: Not available

AUTOIGNITION TEMPERATURE:

Not available

HAZARDOUS COMBUSTION

PRODUCTS:

Decomposition and combustion materials may be toxic.

Burning may produce phosgene gas, nitrogen oxides, carbon

monoxide and unidentified organic compounds.

CONDITIONS OF FLAMMABILITY:

EXTINGUISHING MEDIA:

Heat, sparks, or flame.

Carbon dioxide, regular foam, dry chemical, water spray, or

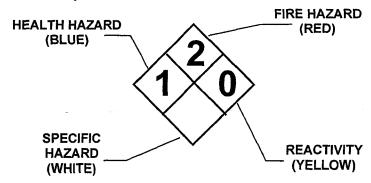
water fog.

NFPA 704

HAZARD IDENTIFICATION:

This information is intended solely for the use by individuals

trained in this system.



FIRE FIGHTING INSTRUCTIONS:

Keep storage containers cool with water spray. A positivepressure, self-contained breathing apparatus (SCBA) and fullbody protective equipment are required for fire emergencies.

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FIRE AND EXPLOSION HAZARDS:

Vapor explosion hazard indoors, outdoors, or in sewers. Vapors may travel to ignition source and flashback. Vapors will spread along the ground and collect in low or confined areas. Run-off to sewer may create a fire hazard. Heated containers may rupture or be thrown into the air. "Empty" containers may retain residue and can be dangerous. Product is not sensitive to mechanical impact or static discharge.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Remove all ignition sources. Do not touch or walk through spilled product. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. A vapor suppressing foam may be used to reduce vapors. Contain spill away from surface water and sewers. Contain spill as a liquid for possible recovery, or sorb with compatible sorbent material and shovel with a clean, sparkproof tool into a sealable container for disposal.

Additionally, for large spills: Water spray may reduce vapor, but may not prevent ignition in closed spaces. Dike far ahead of liquid spill for collection and later disposal.

SECTION 7: HANDLING AND STORAGE

HANDLING:

Keep away from heat, sparks, or flame. Where flammable mixtures may be present, equipment safe for such locations should be used. Use clean, sparkproof tools and explosion-proof equipment. When transferring product, metal containers, including trucks and tank cars, should be grounded and bonded. Do not breathe vapor or mist. Use in a well ventilated area. Avoid contact with eyes, skin, clothing, and shoes. Do not smoke while using this product.

SHIPPING AND STORING:

Keep container tightly closed when not in use and during transport. Store containers in a cool, dry place. Do not pressurize, cut, weld, braze, solder, drill, or grind containers. Keep containers away from heat, flame, sparks, static electricity, or other sources of ignition. Empty product containers may retain product residue and can be dangerous.

See **SECTION 14: TRANSPORTATION INFORMATION** for Packing Group information.

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING **CONTROLS:**

Provide general ventilation needed to maintain concentration of vapor or mist below applicable exposure limits. Where adequate general ventilation is unavailable, use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below applicable exposure limits. Where explosive mixtures may be present, equipment safe for such locations should be used.

PERSONAL PROTECTIVE EQUIPMENT

PROTECTION:

RESPIRATORY Use NIOSH-certified P- or R- series particulate filter and organic vapor cartridges when concentration of vapor or mist exceeds applicable exposure limits. Protection provided by air purifying respirators is limited. Do not use N-rated respirators. Selection and use of respiratory protective equipment should be in accordance in the USA with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4.

EYE PROTECTION:

Wearing chemical goggles is recommended. Contact lens use is not recommended without eye protection.

SKIN **PROTECTION:** Where skin contact is likely, wear chemical impervious protective gloves; use of natural rubber (latex) or equivalent gloves is not recommended.

To avoid prolonged or repeated contact with product where spills and splashes are likely, wear appropriate chemical-resistant faceshield, boots, apron, whole body suits or other protective clothing.

PERSONAL HYGIENE:

Use good personal hygiene. Wash thoroughly with soap and water after handling product and before eating, drinking, or using tobacco products. Clean affected clothing, shoes, and protective equipment before reuse. Discard affected clothing, shoes, and/or protective equipment if they cannot be thoroughly cleaned. Discard leather articles, such as shoes, saturated with this product.

OTHER **PROTECTIVE EQUIPMENT:**

Where spills and splashes are likely, facilities storing or using this product should be equipped with an emergency eyewash and shower, both

equipped with clean water, in the immediate work area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE, APPEARANCE, AND ODOR: Thick black, viscous liquid with a petroleum odor.

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FUEL OIL

MATERIAL SAFETY DATA SHEET FOR USA AND CANADA

ODOR THRESHOLD:

Not available.

MOLECULAR WEIGHT:

Not available.

SPECIFIC GRAVITY:

0.8 to 1.0 (water = 1) @ 60°F (16°C)

DENSITY:

6.7 to 8.3 LB/US gal (800 to 1000 g/l)

VAPOR DENSITY:

Not available.

VAPOR PRESSURE:

Not available.

BOILING POINT:

Not available.

FREEZING/MELTING POINT:

Not available.

pH:

Not applicable.

EVAPORATION RATE:

Less than 1 (Butyl acetate = 1)

SOLUBILITY IN WATER:

Slight.

FLASH POINT:

180°F (82°C) Closed Cup

FLAMMABLE LIMITS IN AIR:

LOWER: Not available UPPER: Not available

AUTOIGNITION TEMPERATURE: Not available

SECTION 10: STABILITY AND REACTIVITY

STABILITY:

Stable under normal temperatures and pressures. Avoid heat, sparks, or

flame.

INCOMPATIBILITY:

Avoid acids, alkalies, oxidizing agents, reducing agents, reactive metals

or reactive halogens.

REACTIVITY:

Polymerization is not known to occur under normal temperature and

pressures. Not reactive with water.

HAZARDOUS

DECOMPOSITION PRODUCTS:

None under normal temperatures and pressures. See also **SECTION 5**:

HAZARDOUS COMBUSTION PRODUCTS.

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SECTION 11: TOXICOLOGICAL INFORMATION

SENSITIZATION:

Based on best current information, there may be known human

sensitization associated with this product.

MUTAGENICITY:

Based on best current information, there may be known mutagenicity

associated with this product.

CARCINOGENICITY:

Mineral oils, untreated or mildly treated are categorized by IARC as carcinogenic to humans (Group 1). Mineral oils, untreated or mildly treated are listed by NTP as having limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals. There may be hydrocarbon and chlorinated solvents, metals. and polynuclear aromatics present in this product which are listed by OSHA as carcinogens. There may be hydrocarbon and chlorinated solvents, metals, and polynuclear aromatics present in this product which are categorized by IARC as carcinogenic to humans (Group 1). probably carcinogenic to humans (Group 2A), and/or possibly carcinogenic to humans (Group 2B). There may be hydrocarbon and chlorinated solvents, metals, and polynuclear aromatics present in this product which are classified by NTP as known carcinogens and/or as having limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals. There may be hydrocarbon and chlorinated solvents, metals, and polynuclear aromatics present in this product which are recognized by ACGIH as

confirmed human carcinogens (A1) and/or suspected human

carcinogens (A2).

Also see SECTION 15: CALIFORNIA.

REPRODUCTIVE TOXICITY:

Based on best current information, there may be known reproductive

toxicity associated with this product.

TERATOGENICITY:

Based on best current information, there may be known teratogenicity

associated with this product.

TOXICOLOGICALLY

SYNERGISTIC PRODUCT(S):

Based on best current information, there may be known toxicologically

synergistic products associated with this product.

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SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY:

Components of this product may be harmful to aquatic life.

OCTANOL/WATER

Not available.

PARTITION COEFFICIENT:

VOLATILE ORGANIC

56 WT%; <500 g/L (calculated)

COMPOUNDS:

As per 40 CFR Part 51.100(s).

SECTION 13: DISPOSAL CONSIDERATIONS

DISPOSAL:

Dispose in accordance with federal, state, provincial, and local regulations.

Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Safety-

Kleen regarding proper recycling or disposal.

CODE(S):

USEPA WASTE Based on available data, this information applies to the product as supplied to the user. Processing, use, or contamination by the user may change the

waste code applicable to the disposal of this product.

SECTION 14: TRANSPORT INFORMATION

DOT:

Shipping Name: Combustible Liquid, n.o.s (Petroleum Oil)

UN/NA #: NA1993 Hazard Class: Combustible Liquid Packing Group: III

Required Label(s): None

Additional Info.: Non-bulk packages may be reclassified as Not Regulated.

TDG:

Shipping Name: Not regulated as a Dangerous Good.

EMERGENCY RESPONSE

128

GUIDE NUMBER:

Reference North American Emergency Response Guidebook

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SECTION 15: REGULATORY INFORMATION

USA REGULATIONS

SARA SECTIONS 302 AND 304:

Based on the ingredients listed in SECTION 2, this product does may contain" extremely hazardous substances" listed pursuant to Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) Section 302 or Section 304 as identified in 40 CFR Part 355. Appendix A and B.

SARA SECTIONS 311 AND 312:

This product poses the following health hazards as defined in 40 CFR Part 370 and is subject to the requirements of sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA):

Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard

Fire Hazard

SARA SECTION

313:

This product may contain "toxic" chemicals subject to the requirements of section 313 of Title III of the Superfund Amendments and

Reauthorization Act of 1986 (SARA) and 40 CFR Part 372.

CERCLA:

Based on the ingredients listed in **SECTION 2**, this product may contain any "hazardous substances" listed pursuant to the Comprehensive

Environmental Response, Compensation and Liability Act of 1980

(CERCLA) in 40 CFR Part 302, Table 302.4.

TSCA:

Not available.

CALIFORNIA:

This product is not for sale or use in the State of California.

CANADIAN REGULATIONS

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all information required by the CPR.

WHMIS:

Class B3 - Combustible Liquid Class D2A - Chronic toxic effects.

Class D2B - Irritating to eyes and skin.

CANADIAN ENVIRONMENTAL

Not available.

PROTECTION ACT (CEPA):

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FUEL OIL MATERIAL SAFETY DATA SHEET FOR USA AND CANADA

SECTION 16. OTHER INFORMATION

REVISION INFORMATION:

Regulatory update. Updated in Sections 1 (Dates), 3 (Emergency Overview), 4 (Phone Numbers), 8 (Personal Protective Equipment), 12 (Ecotoxicity Information), 13 (Disposal Considerations), 16 (Revision Information).

LABEL/OTHER INFORMATION:

Not available.

User assumes all risks incident to the use of this (these) product(s). To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either express or implied, or merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to information or the product to which information refers. The data contained on this sheet apply to the product(s) as supplied to the user.

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MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Petersburg Oil Terminal

Refinery's identification: Novokuybyshevsk refinery, Syzran refinery, Orsk refinery, Salavat refinery, Moscow refinery, Nizhnekamsk refinery, Norsi refinery, Perm refinery, Samara refinery.

Product Name: Fuel Oil No. 6

(Straight Run Atmospheric Residual Oil) Last Revision: 03/22/00 MSDS Number: A0007b.msd Date Prepared: 09/01/06

Synonyms:

M100, M40, E-4

Product Description: A complex mixture of paraffinic, olefinic, naphthenic and aromatic hydrocarbons.

2. COMPOSITION & INFORMATION ON INGREDIENTS

Occupational Exposure Limits*

OSHA ACGIH

Product

CAS No. Wt% PEL TLV Other Units

Fuel Oil No. 6

68333-00-4 100 N/A N/A

(Straight Run Atmospheric Residual Oil)

Component(s)

Hydrogen Sulfide

7783-06-4 0-0:04 10 10 15 STEL ppm

CAUTION! Under certain circumstances sulfur compounds in hot product may form hydrogen sulfide (H₂S). Cooling product may continue to emit traces of H₂S temporarily entrapped or other dissolved

Key: * = 8-Hr. TWA unless otherwise specified

STEL = Short Term Exposure Limit; 15 minutes.

N/A = Not Applicable

3. HAZARD IDENTIFICATION

Note:

This product has not been tested by El Paso Corporation to determine its specific health hazards. Therefore, the information provided in this section includes health hazard information on the product components.

Carcinogenicity: NTP IARC Monographs OSHA Regulated

Fuel Oil No. 6

2B* No

Hydrogen Sulfide No

No

No

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"2B*" = This product mixture (heavy residual fuel oils) has been classified by IARC as "possibly carcinogenic to humans".

Potential Health Effects From Overexposure:

Acute Effects:

Eyes:

Slight to moderate eye irritation.

Skin:

Moderately irritating, causing redness, drying and cracking of skin.

Inhalation:

Inhalation can be irritating to the mucous membrane and respiratory tract. May produce symptoms of intoxication such as; headache, dizziness, nausea, vomiting, loss of coordination. Hydrogen sulfide can cause headache, dizziness, respiratory paralysis,

unconsciousness and/or death.

Ingestion:

Ingestion may cause gastrointestinal disturbances such as nausea, vomiting and diarrhea.

Chronic Effects:

Prolonged and repeated skin contact may cause dermatitis.

Additional Medical and Toxicological Information:

May aggravate pre-existing dermatitis. This product contains polynuclear aromatics, which have caused carcinogenic effects in laboratory animals.

4. FIRST AID MEASURES

Eye Contact:

Immediately flush with large amounts of water for at least 15 minutes, including under the eyelids. Contact a physician immediately, preferably an ophthalmologist. Speed and thoroughness in rinsing eyes are important to avoid permanent injury.

Skin Contact:

Cool the exposed area immediately. Remove contaminated clothing. Wash affected areas with soap and water, get medical attention.

Inhalation:

Remove to fresh air. If breathing has stopped, apply artificial respiration. Seek medical

attention.

Imgestion:

Do not induce vomiting. If spontaneous vomiting occurs, hold the victimus head lower

than their hips to prevent aspiration.

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5. FIRE FIGHTING MEASURES

Flash Point:

>150°F

Flammable Limits in Air, % by Volume:

Lower: N/A Upper: N/A

Autoignition Temperature: N/A

Extinguishing Media: Dry chemical, foam, carbon dioxide, and water spray.

NFPA Ratings: Health: 0 Flammability: 2 Reactivity: 0

General Hazard:

Flowing oil can be ignited by self-generated static electricity; check for combustible vapors prior to and during welding and torch cutting on tanks and vessels.

Fire Fighting Instructions:

Use a water spray to cool fire-exposed containers. Use a smothering technique for extinguishing fire of this combustible liquid. Do not use a force water stream directly on oil fires as this will tend to scatter the fire. Firefighters should wear self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE

Remove source of heat or ignition including internal combustion engines and power tools. Clean up spill, but do not flush to sewers of surface water. Ventilate area and avoid breathing.

7. HANDLING & STORAGE

Store away from incompatible materials. Ground and bond all transfer and storage equipment to prevent static sparks and equip with self-closing valves, pressure vacuum bungs and flame arrestors. Empty containers may contain residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flame sparks or other sources of ignition; they may explode and cause injury or death.

Additional Storage Warning: Hydrogen sulfide and other relatively low flash point substances may accumulate in vapor spaces of fuel oil tanks and bulk transport compartments. This not only poses an additional physical hazard (e.g., flammability) but also a potentially serious health hazard as well, due to the toxicity of hydrogen sulfide.

8. EXPOSURE CONTROL, PERSONAL PROTECTION

Eye Protection:

Remove contact lenses and wear chemical safety glasses or goggles where

contact with liquid or mist may occur.

Skin Protection:

Wear impervious gloves when contact with skin may occur. Launder

contaminated clothing prior to reuse. Wash with soap and water before eating,

drinking or smoking.

Inhalation:

Use approved respiratory protective equipment for cleaning large spills or entry

into tanks, vessels or other confined spaces.

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Ventilation:

Provide adequate general and local ventilation: (1) to maintain airborne chemical concentrations below applicable exposure limits, (2) to prevent accumulation of flammable vapors and formation of explosive atmospheres, and (3) to prevent formation of oxygen deficient atmospheres, especially in confined spaces. [Note: this product may release gases or vapors that can displace oxygen in enclosed areas.]

9. PHYSICAL & CHEMICAL PROPERTIES

See certificate of quality No456 dd 09/30/06

Odor: Mild petroleum

Appearance: Black viscous liquid

10. STABILITY & REACTIVITY

Stability: Stable under normal conditions of use.

Hazardous Polymerization: Will not occur.

Conditions to Avoid/Incompatibilities: Strong oxidizing agents, heat, sparks, flame and build up of static

electricity.

Hazardous Decomposition Products: CO, CO₂, SO₂, H₂S, and reactive hydrocarbons.

11. TOXICOLOGICAL INFORMATION

No data available.

12. ECOLOGICAL INFORMATION

No data available.

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13. DISPOSAL INFORMATION

Dispose through a licensed waste disposal company. Follow applicable federal, state and local disposal regulations.

14. TRANSPORT INFORMATION

Fuel Oil, 3, NA 1993, Packing Group III.

15. REGULATORY INFORMATION

EPA SARA TITLE III

Section 302 EPCRA Extremely Hazardous Substances (EHS)

Product Component

CAS No. Wt% RQ, Ib TPQ, Ib

Hydrogen Sulfide

7783-00-4 0-0.04 100

Section 304 CERCLA Hazardous Substances

Product Component

CAS No. Wt% RQ, lb

Hydrogen Sulfide

7783-00-4 0-0.04 100

Section 311/312 Hazard Categorization

Acute: Chronic: Fire: Pressure: Reactive:

X X X

Section 313 EPCRA Toxic Substances

Product Component

CAS No.

Wt.%

Hydrogen Sulfide

7783-00-4

0 - 0.04

Key:

RQ = Reportable Quantity

TPQ = Threshold Planning Quantity of EHS

16. OTHER INFORMATION

THIS INFORMATION RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED AND MAY NOT BE VALID FOR SUCH MATERIAL USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS. SUCH INFORMATION IS TO THE BEST OF THIS COMPANY'S KNOWLEDGE AND BELIEVED ACCURATE AND RELIABLE AS OF THE DATE INDICATED. HOWEVER, NO REPRESENTATION, WARRANTY OR GUARANTEE IS MADE AS TO THE ACCURACY, RELIABILITY OR COMPLETENESS. IT IS THE USER'S RESPONSIBILITY TO SATISFY THEMSELVES AS TO THE SUITABILITY AND COMPLETENESS OF SUCH INFORMATION FOR THEIR OWN PARTICULAR USE.

This is the end of MSDS A0007b.msd

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IMTT EH&S Product Review Form

Information to be provided with MSDS by Traffic
Tank Number 494/695 (ATLANTIC TRADENG)
Product Name FUEL DEL # 6
System 36 product group
Heated product: Yes or No (circle one)
- if different than ~130 F, state average temperature and range:
Chemical Information
Vapor Pressure: NOT INDICATED
Flash Point: 2150° E
Incompatible chemicals: OXFDTZING AGENTS, HEAT, SPANCES, FLAMS
List HAP/TAP and weight percentage in liquid: 1425 0-0.04
Environmental Regulatory Concerns
SPCC diking adequate: (Yes) No, Possible (circle one)
Expected to be hazardous waste (all petroleum liquids are tested before disposal): Yes, No (circle one)
Addressed in water permit: Yes? No, Possible (circle one)
Addressed in air permit: (Yes) No, Possible (circle one)
Fugitive emission monitoring: Yes or No (circle one)
Date MSDS Issued: 09/01/06
Health and Safety
Personal Protective Equipment Requirements: (circle all that apply, add additional if necessary)
Safety Glasses Goggles Faceshield Apron Chemical Suit
Chemical Gloves Boots HS Monitor
Comments
ENSURE CPR STATEMENT IS USED TO INDICATE
Have I take I have been a second
HAPS / TAPS / UP IS WENTEN DERMITTED LIMITS
Terminal Approval
X St. Rose Signature: Date: 4/17/07
SAME SAME SAME SAME SAME SAME SAME SAME
Avondale Signature: Ranch Calant Date: 4/23/07
Jan
Gretna Signature: Vary Na Date: 4/25/07



Revision Date: 29Jun2007

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MATERIAL SAFETY DATA SHEET

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: GASOLINE, UNLEADED AUTOMOTIVE

Product Description: Hydrocarbons and Additives

Product Code: 123455-20, 9700, 977032, 977217, 977306, 977360, 977371, 977381, 977445, 977562, 977767, 977920, 979533, 97A039, 97A065, 97A078, 97A087, 97A102, 97A108, 97A146, 97A147, 97A152, 97A193, 97A200, 97A240, 97A266, 97A273, 97A290, 97A305, 97A316, 97A317, 97A328, 97A347, 97A380, 97A404, 97A424, 97A431, 97A441, 97A514, 97A556, 97A557, 97A613. 97A634, 97A653, 97A655, 97A659, 97A686, 97A696, 97A703, 97A712, 97A726, 97A736, 97A746, 97A767, 97A794, 97A798, 97A827, 97A848, 97A851, 97A876, 97A883, 97A907, 97A934, 97A948, 97A949, 97A960, 97A983, 97A989, 97AW38, 97C070, 97C072, 97C075, 97C110, 97C112, 97C140, 97C148, 97C166, 97C417, 97C558, 97C576, 97C632, 97C113, 97C118, 97C127, 97C702, 97C731, 97C759, 97C770, 97C782, 97C794, 97C870, 97C917, 97D130, 97D228, 97E002, 97E010, 97E041, 97E065, 97E087, 97E103, 97E104, 97E11, 97E112, 97E113, 97E170, 97E171, 97E196, 97E197, 97E259, 97E260, 97E304, 97E305, 97E347, 97E42, 97E532, 97E564, 97E581, 97E595, 97E606, 97E611, 97E619, 97E649, 97E655, 97E66, 97E682, 97E749, 97E860, 97E88, 97E999, 97F005, 97F020, 97F030, 97F054, 97F312, 97F344, 97F952, 97M190, 97M191, 97M192, 97M193, 97M194, 97M195, 97M229, 97M230, 97M232, 97N832, 97N844, 97N861, 97N873, 97N879, 97N891, 97N895, 97N917, 97N921, 97N954, 97Q303, 97Q763, 97Q781, 97Q782, 97R368, 97S760, 97X861, EMGF20 Intended Use: Fuel, Gasoline

COMPANY IDENTIFICATION

Supplier:

EXXON MOBIL CORPORATION

3225 GALLOWS RD.

FAIRFAX, VA. 22037

24 Hour Health Emergency

609-737-4411 800-424-9300

Transportation Emergency Phone

281-834-3296

ExxonMobil Transportation No.

MSDS Requests

713-613-3661

Product Technical Information

800-662-4525, 800-947-9147

MSDS Internet Address

http://www.exxon.com, http://www.mobil.com

SECTION 2

COMPOSITION / INFORMATION ON INGREDIENTS

Reportable Hazardous Substance(s) or Complex Substance(s)

Name	CAS#	Concentration*
ETHYL ALCOHOL	64-17-5	< 11%
GASOLINE	86290-81-5	89 - 100%

Hazardous Constituent(s) Contained in Complex Substance(s)

Name	CAS#	Concentration*
BENZENE	71-43-2	0.1 - 5%
ETHYL BENZENE	100-41-4	1 - 5%
N-HEXANE	110-54-3	1 - 5%
NAPHTHALENE	91-20-3	<1%
PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)	95-63-6	1 - 5%
TOLUENE	108-88-3	5 - 10%



Revision Date: 29Jun2007

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	TRIMETHYL BENZENE	25551-13-7	1 - 5%	
Į	XYLENES	1330-20-7	5 - 10%	· ·

^{*} All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

NOTE: The concentration of the components shown above may vary substantially. In certain countries, benzene content may be limited to lower levels. Oxygenates such as tertiary-amyl-methyl ether, ethanol, di-isopropyl ether, and ethyl-tertiary-butyl ether may be present. Because of volatility considerations, gasoline vapor may have concentrations of components very different from those of liquid gasoline. The major components of gasoline vapor are: butane, isobutane, pentane, and isopentane. The reportable component percentages, shown in the composition/information on ingredients section, are based on API's evaluation of a typical gasoline mixture.

SECTION 3

HAZARDS IDENTIFICATION

This material is considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

POTENTIAL PHYSICAL / CHEMICAL EFFECTS

Extremely flammable. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited. Material can accumulate static charges which may cause an incendiary electrical discharge.

POTENTIAL HEALTH EFFECTS

Irritating to skin. If swallowed, may be aspirated and cause lung damage. May be irritating to the eyes, nose, throat, and lungs. May cause central nervous system depression. High-pressure injection under skin may cause serious damage. Prolonged and repeated exposure to benzene may cause serious injury to blood forming organs and is associated with anemia and to the later development of acute myelogenous leukemia (AML).

Target Organs: Lung | Skin |

ENVIRONMENTAL HAZARDS

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

NFPA Hazard ID:

Health: 1

Flammability: 3

Reactivity: 0

HMIS Hazard ID:

Health: 1*

Flammability: 3

Reactivity: 0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 4

FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing



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before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

Seek immediate medical attention. Do not induce vomiting.

NOTE TO PHYSICIAN

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE

Benzene- Individuals with liver disease may be more susceptible to toxic effects.

SECTION 5

FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop a leak. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Extremely Flammable. Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

Hazardous Combustion Products: Smoke, Fume, Sulfur oxides, Aldehydes, Oxides of carbon, Incomplete combustion products

FLAMMABILITY PROPERTIES

Flash Point [Method]: <-40C (-40F) [ASTM D-56]

Flammable Limits (Approximate volume % in air): LEL: 1.4 UEL: 7.6

Autoignition Temperature: >250°C (482°F)

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.



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PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for Personal Protective Equipment.

SPILL MANAGEMENT

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapor; but may not prevent ignition in closed spaces. Recover by pumping or with suitable absorbent.

Water Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Do not confine in area of spill. Advise occupants and shipping in downwind areas of fire and explosion hazard and warn them to stay clear. Allow liquid to evaporate from the surface. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7

HANDLING AND STORAGE

HANDLING

Avoid breathing mists or vapors. Avoid contact with skin. Use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapors may be evolved from heated or agitated material. Do not siphon by mouth. Use only with adequate ventilation. Use proper bonding and/or grounding procedures. Do not use as a cleaning solvent or other non-motor fuel uses. For use as a motor fuel only. It is dangerous and/or unlawful to put fuel into unapproved containers. Do not fill container while it is in or on a vehicle. Static electricity may ignite vapors and cause fire. Place container on ground when filling and keep nozzle in contact with container. Do not use electronic devices (including but not limited to cellular phones, computers, calculators, pagers or other electronic devices, etc.) in or around any fueling operation or storage area unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source).

Static Accumulator: This material is a static accumulator.

STORAGE

Ample fire water supply should be available. A fixed sprinkler/deluge system is recommended. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Outside or detached storage preferred. Storage containers should be grounded and



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bonded. Drums must be grounded and bonded and equipped with self-closing valves, pressure vacuum bungs

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Source	Form	Limit / S	tandard	Note	Source
BENZENE		OSHA Action level	0.5 ppm	N/A	OSHA Sp.Reg.
BENZENE		STEL	5 ppm	N/A	OSHA Sp.Reg.
DENZENE		71///	1 nnm	NI/A	USHV



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bonded. Drums must be grounded and bonded and equipped with self-closing valves, pressure vacuum bungs and flame arresters

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Source	Form	Limit / Standard			Note	Source
BENZENE		OSHA	0.5 ppm		N/A	OSHA
		Action		-	1	Sp.Reg.
		level		<u> </u>	<u> </u>	
BENZENE		STEL	5 ppm		N/A	OSHA
			1			Sp.Reg.
BENZENE)	TWA	1 ppm	ļ	N/A	OSHA
		<u> </u>	L			Sp.Reg.
BENZENE		STEL	2.5 ppm		Skin	ACGIH
BENZENE		TWA	0.5 ppm	<u> </u>	Skin	ACGIH
ETHYL ALCOHOL	1	TWA	1900	1000 ppm	N/A	OSHA Z1
			mg/m3			
ETHYL ALCOHOL		TWA	1000 ppm		N/A	ACGIH
ETHYL BENZENE		TWA	435 mg/m3	100 ppm	N/A	OSHA Z1
ETHYL BENZENE		STEL	125 ppm		N/A	ACGIH
ETHYL BENZENE		TWA	100 ppm	•	N/A	ACGIH
GASOLINE	Vapor.	TWA	300 mg/m3	100 ppm	N/A	ExxonMobil
GASOLINE		STEL	500 ppm		N/A	ACGIH
GASOLINE		TWA	300 ppm		N/A	ACGIH
N-HEXANE		TWA	1800	500 ppm	N/A	OSHA Z1
			mg/m3		1	
N-HEXANE		TWA	50 ppm		Skin	ACGIH
NAPHTHALENE		TWA	50 mg/m3	10 ppm	N/A	OSHA Z1
NAPHTHALENE		STEL	15 ppm		Skin	ACGIH
NAPHTHALENE		TWA	10 ppm		Skin	ACGIH
PSEUDOCUMENE (1,2,4-		TWA	25 ppm		N/A	ACGIH
TRIMETHYLBENZENE)		1	l	[
TOLUENE		Ceiling	300 ppm	}	N/A	OSHA Z2
TOLUENE		Maximum	500 ppm		N/A	OSHA Z2
		concentrat		}	ļ	
		ion	}	į	}	
TOLUENE		TWA	200 ppm		N/A	OSHA Z2
TRIMETHYL BENZENE		TWA	25 ppm		N/A	ACGIH
XYLENES		TWA	435 mg/m3	100 ppm	N/A	OSHA Z1
XYLENES		STEL	150 ppm	 	N/A	ACGIH
XYLENES	1	TWA	100 ppm		N/A	ACGIH

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS



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The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Use explosion-proof ventilation equipment to stay below exposure limits.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Work conditions can greatly affect glove durability; inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

If prolonged or repeated contact is likely, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

If prolonged or repeated contact is likely, chemical, and oil resistant clothing is recommended.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

GENERAL INFORMATION

Physical State: Liquid
Color: Clear (May Be Dyed)
Odor: Petroleum/Solvent
Odor Threshold: N/D



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IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 C): 0.74

Flash Point [Method]: <-40C (-40F) [ASTM D-56]

Flammable Limits (Approximate volume % in air): LEL: 1.4 UEL: 7.6

Autoignition Temperature: >250°C (482°F)

Boiling Point / Range: > 20C (68F) Vapor Density (Air = 1): 3 at 101 kPa

Vapor Pressure: > 26.6 kPa (200 mm Hg) at 20 C Evaporation Rate (n-butyl acetate = 1): > 10

pH: N/A

Log Pow (n-Octanol/Water Partition Coefficient): > 3

Solubility in Water: Negligible

Viscosity: <1 cSt (1 mm2/sec) at 40 C Oxidizing Properties: See Sections 3, 15, 16.

OTHER INFORMATION

Freezing Point: N/D Melting Point: N/A

SECTION 10

STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Avoid heat, sparks, open flames and other ignition sources.

MATERIALS TO AVOID: Halogens, Strong Acids, Alkalies, Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11

TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Route of Exposure	Conclusion / Remarks				
Inhalation					
Toxicity (Rat): LC50 > 5000 mg/m3	Minimally Toxic. Based on test data for structurally similar materials.				
Irritation: No end point data.	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat lungs. Based on assessment of the components.				
Ingestion					
Toxicity (Rat): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.				
Skin					
Toxicity (Rabbit): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.				
Irritation: No end point data.	Moderately irritating to skin with prolonged exposure. Based on test data for structurally similar materials.				
Eye					



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1	ritation: Data available.	May cause mild, short-lasting discomfort to eyes. Based on test	1
, "			1
1		data for structurally similar materials.	ı

CHRONIC/OTHER EFFECTS

For the product itself:

Laboratory animal studies have shown that prolonged and repeated inhalation exposure to light hydrocarbon vapors in the same boiling range as this product can produce adverse kidney effects in male rats. However, these effects were not observed in similar studies with female rats, male and female mice, or in limited studies with other animal species. Additionally, in a number of human studies, there was no clinical evidence of such effects at normal occupational levels. In 1991, The U.S. EPA determined that the male rat kidney is not useful for assessing human risk.

Vapor concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic and may have other central nervous system effects. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Gasoline unleaded: Caused cancer in animal tests. Chronic inhalation studies resulted in liver tumors in female mice and kidney tumors in male rats. Neither result considered significant for human health risk assessment by the United States EPA and others. Did not cause mutations In Vitro or In Vivo. Negative in inhalation developmental studies and reproductive tox studies. Inhalation of high concentrations in animals resulted in reversible central nervous system depression, but no persistent toxic effect on the nervous system. Non-sensitizing in test animals. Caused nerve damage in humans from abusive use (sniffing).

Contains

BENZENE: Caused cancer (leukemia), damage to the blood-producing system, and serious blood disorders from prolonged, high exposure based on human epidemiology studies. Caused genetic effects and effects on the immune system in laboratory animal and some human studies. Caused toxicity to the fetus in laboratory animal studies. ETHANOL: Prolonged or repeated exposure to high concentrations of ethanol vapor or overexposure by ingestion may produce adverse effects to brain, kidney, liver, and reproductive organs, birth defects in offspring, and developmental toxicity in offspring.

NAPHTHALENE: Exposure to high concentrations of naphthalene may cause destruction of red blood cells, anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings to humans is uncertain. N-HEXANE: Prolonged and/or repeated exposures to n-Hexane can cause progressive and potentially irreversible damage to the peripheral nervous system (e.g. fingers, feet, arms, legs, etc.). Simultaneous exposure to Methyl Ethyl Ketone (MEK) or Methyl Isobutyl Ketone (MIBK) and n-Hexane can potentiate the risk of adverse effects from n-Hexane on the peripheral nervous system. n-Hexane has been shown to cause testicular damage at high doses in male rats. The relevance of this effect for humans is unknown

TOLUENE: Concentrated, prolonged or deliberate inhalation may cause brain and nervous system damage. Prolonged and repeated exposure of pregnant animals (> 1500 ppm) have been reported to cause adverse fetal developmental effects.

TRIMETHYLBENZENE: Long-term inhalation exposure of trimethylbenzene caused effects to the blood in laboratory animals.

ETHYLBENZENE: Caused cancer in laboratory animal studies. The relevance of these findings to humans is uncertain.

Additional information is available by request.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
BENZENE	71-43-2	1, 3, 6
ETHYL BENZENE	100-41-4	5



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GASOLINE	86290-81-5	5	
NAPHTHALENE	91-20-3	2, 5	

-- REGULATORY LISTS SEARCHED --

1 = NTP CARC

3 = IARC 1

5 = IARC 2B

2 = NTP SUS

4 = IARC 2A

6 = OSHA CARC

SECTION 12

ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

MOBILITY

More volatile component -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

Less volatile component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Majority of components -- Expected to be inherently biodegradable

Atmospheric Oxidation:

More volatile component -- Expected to degrade rapidly in air

BIOACCUMULATION POTENTIAL

Majority of components -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13

DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). Potential RCRA characteristics: IGNITABILITY. TCLP (BENZENE)

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and



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can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14

TRANSPORT INFORMATION

LAND (DOT)

Proper Shipping Name: GASOLINE

Hazard Class & Division: 3

Packing Group: II ERG Number: 128

Label(s): 3

Transport Document Name: UN1203, GASOLINE, 3, PG II

LAND (TDG)

Proper Shipping Name: GASOLINE

Hazard Class & Division: 3

UN Number: 1203
Packing Group: II
Special Provisions: 17

SEA (IMDG)

Proper Shipping Name: MOTOR SPIRIT or GASOLINE or PETROL

Hazard Class & Division: 3 EMS Number: F-E, S-E UN Number: 1203 Packing Group: II

Label(s): 3

Transport Document Name: UN1203, MOTOR SPIRIT or GASOLINE or PETROL, 3, PG II, (-40°C c.c.)

AIR (IATA)

Proper Shipping Name: GASOLINE

Hazard Class & Division: 3

UN Number: 1203 Packing Group: II

Label(s): 3

Transport Document Name: UN1203, GASOLINE, 3, PG II

SECTION 15

REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purpose, this material is classified as hazardous in accordance with OSHA 29CFR 1910.1200.

NATIONAL CHEMICAL INVENTORY LISTING: AICS, DSL, EINECS, ENCS, KECI, PICCS, TSCA

EPCRA: This material contains no extremely hazardous substances.

CERCLA: This material is not subject to any special reporting under the requirements of the Comprehensive



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Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: Fire. Immediate Health. Delayed Health.

SARA (313) TOXIC RELEASE INVENTORY:

Chemical Name	CAS Number	Typical Value	
PSEUDOCUMENE (1,2,4- TRIMETHYLBENZENE)	95-63-6	1 - 5%	
N-HEXANE	110-54-3	1 - 5%	
ETHYL BENZENE	100-41-4	1 - 5%	
XYLENES	1330-20-7	5 - 10%	
BENZENE	71-43-2	0.1 - 5%	
NAPHTHALENE	91-20-3	<1%	
TOLUENE	108-88-3	5 - 10%	

The Following Ingredients are Cited on the Lists Below:

Chemical Name	CAS Number	List Citations
BENZENE	71-43-2	1, 2, 4, 10, 11, 13, 15, 16, 17, 18, 19
ETHYL ALCOHOL	64-17-5	1, 4, 13, 16, 17, 18, 19
ETHYL BENZENE	100-41-4	1, 4, 10, 13, 16, 17, 18, 19
GASOLINE	86290-81-5	1, 18
N-HEXANE	110-54-3	1, 4, 13, 16, 17, 18, 19
NAPHTHALENE	91-20-3	1, 4, 5, 10
PSEUDOCUMENE (1,2,4- TRIMETHYLBENZENE)	95-63-6	1, 13, 16, 17, 18, 19
TOLUENE	108-88-3	4, 11, 13, 15, 16, 17, 18, 19
TRIMETHYL BENZENE	25551-13-7	1, 13, 16, 17, 18, 19
XYLENES	1330-20-7	1, 4, 5, 13, 15, 16, 17, 18, 19

-- REGULATORY LISTS SEARCHED--

	1120021101		
1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA A	$10 = C\Delta P65 C\Delta PC$	15 = MI 203	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

No revision information is available.

THIS MSDS COVERS THE FOLLOWING MATERIALS: ESSO EXTRA MIDGRADE UNLEADED | ESSO MIDGRADE UNLEADED | ESSO PREMIUM UNLEADED | ESSO SUPER PREMIUM UNLEADED | EXXON MIDGRADE UNLEADED | EXXON PREMIUM UNLEADED | EXXON REGULAR UNLEADED | GASOLINE | INDOLENE GASOLINE | MIDGRADE UNLEADED | MOBIL EXTRA UNLEADED |



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MOBIL REGULAR UNLEADED | MOBIL SPECIAL UNLEADED | MOBIL SUPER UNLEADED | PREMIUM UNLEADED | REGULAR UNLEADED | UNLEADED GASOLINE

PRECAUTIONARY LABEL TEXT:

Contains: BENZENE GASOLINE

DANGER!

HEALTH HAZARDS

Irritating to skin. If swallowed, may be aspirated and cause lung damage. Prolonged and repeated exposure to benzene may cause serious injury to blood forming organs and is associated with anemia and to the later development of acute myelogenous leukemia (AML).

Target Organs: Lung | Skin |

PHYSICAL HAZARDS

Extremely flammable. Material can accumulate static charges which may cause an incendiary electrical discharge. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited.

PRECAUTIONS

Avoid breathing mists or vapors. Avoid contact with skin. Use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapors may be evolved from heated or agitated material. Do not siphon by mouth. Use only with adequate ventilation. Use proper bonding and/or grounding procedures.

FIRST AID

Inhalation: Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

Eye: Flush thoroughly with water. If irritation occurs, get medical assistance.

Oral: Seek immediate medical attention. Do not induce vomiting.

Skin: Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

FIRE FIGHTING MEDIA

Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

SPILL/LEAK

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Recover by pumping or with suitable absorbent.

Water Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Do not confine in area of spill. Advise occupants and shipping in downwind areas of fire and explosion hazard and warn them to stay clear. Allow liquid to evaporate from the surface. Seek the advice of a specialist before using dispersants.



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This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights. This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm. Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm are created by the combustion of this product.

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PPEC: CF

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Material Name: 44K®

MSDS ID: 208

* * * Section 1 - Chemical Product and Company Identification *

Part Number: 208, 208A, 2081, 2085, 20816, 20830, 20853

Product Use: Gasoline Additive **Manufacturer Information**

BG Products Inc. 701 S. Wichita Street Wichita, KS 67213 Phone: (316) 265-2686 Fax: (316) 265-0718

Emergency # 1-800-424-9300 (CHEMTREC)

** Section 2 - Hazards Identification ***

Emergency Overview

WARNING:

- Combustible liquid. Do not use or store near flames, sparks, or hot surfaces.
- This product is irritating to the eyes and skin.
- This product may be harmful by inhalation.
- · This product may be harmful if it is swallowed.

HMIS Ratings: Health: 1 Fire: 2 Physical Hazard: 0 Pers. Prot.: B

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe *= Chronic hazard

* * * Section 3 - Composition / Information on Ingredients * * *

CAS#	Component	Percent
Mixture	Petroleum distillates	40-70
8052-41-3	Mineral spirits	20-25

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Naphtha (petroleum), hydrotreated heavy, Petroleum distillates, hydrotreated light, Petroleum naphtha, light aromatic.

Component Information

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication). This product is considered a controlled product under the Canadian Controlled Products Regulations (CPR).

* * * Section 4 - First Aid Measures * * *

First Aid: Eyes

In case of contact, immediately flush eyes with large amounts of water, continuing to flush for 15 minutes. If irritation persists get medical attention.

First Aid: Skin

For skin contact flush with large amounts of water while removing contaminated clothing. If irritation persists, get medical attention.

First Aid: Ingestion

If ingested, get immediate medical attention. Do not induce vomiting unless instructed to do so by medical personnel.

First Aid: Inhalation

Move person to non-contaminated air. Give artificial respiration if not breathing. Call a physician if symptoms develop or persist.

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Material Name: 44K®

MSDS ID: 208

* * * Section 5 - Fire Fighting Measures * * *

General Fire Hazards

See Section 9 for Flammability Properties. Keep away from heat, sparks, or open flame.

Hazardous Combustion Products

Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

Extinguishing Media

Dry chemical, foam, carbon dioxide.

Fire Fighting Equipment/Instructions

Fire fighters should wear full-face, self contained breathing apparatus and impervious protective clothing. Fire fighters should avoid inhaling any combustion products.

NFPA Ratings: Health: 1 Fire: 2 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

* * * Section 6 - Accidental Release Measures * * *

Containment Procedures

Contain the discharged material. Remove sources of ignition.

Clean-Up Procedures

Wear appropriate protective equipment and clothing during clean-up. Absorb spill with inert material. Shovel material into appropriate container for disposal.

Evacuation Procedures

Isolate area. Keep unnecessary personnel away. In case of large spills, follow all facility emergency response procedures.

Special Procedures

Wear appropriate personal protective equipment.

* * * Section 7 - Handling and Storage * * *

Handling Procedures

Avoid getting this material into contact with your skin and eyes. Wash thoroughly after handling. Use this product with adequate ventilation. Keep container closed.

Storage Procedures

Do not store this material in open or unlabeled containers. Store this product in air-tight containers away from sources of heat and light.

* * * Section 8 - Exposure Controls / Personal Protection * * *

A: Component Exposure Limits

Mineral spirits (8052-41-3)

ACGIH: 100 ppm TWA

OSHA: 100 ppm TWA; 525 mg/m3 TWA

NIOSH: 350 mg/m3 TWA

1800 mg/m3 Ceiling (15 min)

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Material Name: 44K®

MSDS ID: 208

B: Canadian Provincial Exposure Limits

Petroleum distillates (Mixture)

British 200 mg/m3 TWA (as total hydrocarbon vapour) (related to Jet fuels)

Skin notation (related to Jet fuels) Columbia:

Mineral spirits (8052-41-3)

Alberta: 100 ppm TWA; 572 mg/m3 TWA

British 290 mg/m3 TWA Columbia: 580 mg/m3 STEL

Manitoba: 100 ppm TWA; 525 mg/m3 TWA New 100 ppm TWA; 525 mg/m3 TWA

Brunswick:

100 ppm TWA; 575 mg/m3 TWA **NW Territories:**

125 ppm STEL; 720 mg/m3 STEL

Nova Scotia: 100 ppm TWA

100 ppm TWA; 575 mg/m3 TWA 125 ppm STEL; 720 mg/m3 STEL Nunavut:

525 mg/m3 TWAEV Ontario:

Quebec: 100 ppm TWAEV; 525 mg/m3 TWAEV

525 mg/m3 TWA; 100 ppm TWA 656 mg/m3 STEL; 125 ppm STEL Saskatchewan:

100 ppm TWA; 575 mg/m3 TWA Yukon: 150 ppm STEL; 720 mg/m3 STEL

Engineering Controls

Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Wear safety glasses; chemical goggles (if splashing is possible).

Personal Protective Equipment: Skin

Use appropriate hand protection.

Personal Protective Equipment: Respiratory

Use NIOSH approved respirator with cartridge, air line, or SCBA as appropriate based on workplace exposure evaluations.

Personal Protective Equipment: General

Use good industrial hygiene practices in handling this material.

Section 9 - Physical & Chemical Properties

Appearance: Light yellow liquid

Physical State: Liquid Flash Point Method: PMCC

Melting Point: Not Determined

Specific Gravity: 0.8533 Solubility (H2O): Insoluble

Vapor Density: Not Available Lower Flammability Limit: Not Available Not Available

Odor: Solvent Flash Point: 43°C (110°F)

Boiling Point: 156°C (312°F) **Pour Point** <-48°C (-55°F) **Bulk Density:** 7.114 lbs/gal

Vapor Pressure: Not Available Auto Ignition: Not Available

Upper Flammability Limit: Not Available

Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

Stable under normal conditions.

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Material Name: 44K®

MSDS ID: 208

Chemical Stability: Conditions to Avoid

Keep away from heat, ignition sources and incompatible materials. Avoid strong oxidizing agents.

Incompatibility

This product may react with oxidizing agents. Strong oxidizing agents (peroxides, chlorine, strong acids).

Hazardous Decomposition

Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

Possibility of Hazardous Reactions

Will not occur.

** Section 11 - Toxicological Information ***

Acute Dose Effects

A: General Product Information

An LD50 value for this product has not been determined.

B: Component Analysis - LD50/LC50

Petroleum distillates (Mixture)

Oral LD50 Rat: >5000 mg/kg; Dermal LD50 Rabbit: >3160 mg/kg (related to Naphtha (petroleum), hydrotreated heavy)

Carcinogenicity

A: General Product Information

No carcinogenicity data available for this product.

B: Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

* * * Section 12 - Ecological Information * * *

Ecotoxicity

No information available for the product.

*** Section 13 - Disposal Considerations ***

Waste Disposal Instructions

Dispose of in accordance with all applicable Federal, State, Provincial, and local regulations.

* * * Section 14 - Transportation Information * * *

US DOT Information

Shipping Name: Petroleum Lubricating Oil, Not Regulated

IMDG Information

Shipping Name: Flammable Liquid, n.o.s. (contains Mineral Spirits and Petroleum Distillates)

UN #: 1993 Hazard Class: 3 Packing Group: III Flash Point: 43°C Required Label(s): Flammable; Limited Quantity if less than or equal to 5L

IATA Information

Shipping Name: Flammable Liquid, n.o.s. (contains Mineral Spirits and Petroleum Distillates)

UN #: 1993 Hazard Class: 3 Packing Group: III Flash Point: 43°C Required Label(s): Flammable; Limited Quantity if less than or equal to 5L



Material Name: 44K®

MSDS ID: 208

* * * Section 15 - Regulatory Information * *

US Federal Regulations

Components of this product have been checked against the non-confidential TSCA inventory by CAS Registry Number. Components not identified on this non-confidential inventory are exempt from listing (i.e. as polymers) or are listed on the confidential inventory as declared by the supplier.

A: Component Analysis

None of this products components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

B: Component Analysis - Inventory

Component	CAS#	TSCA	CAN	EEC
Mineral spirits	8052-41-3	Yes	DSL	EINECS

State Regulations

Other state regulations may apply. Check individual state requirements.

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	Ri
Mineral spirits	8052-41-3	Yes	Yes	Yes	Yes	Yes	Yes

Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS#	Minimum Concentration
Mineral spirits	8052-41-3	1 %

* * * Section 16 - Other Information * * *

Other Information

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind, express or implied, and we assume no responsibility for any loss, damage, or expense, direct or consequential, arising out of their use. You must notify each person to whom this mixture or trade name product is sold. This statement must not be detached. Any copy or redistribution of the Material Safety Data Sheet shall include this statement.

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; CAS = Chemical Abstract Services; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; CFR = Code of Federal Regulations; CPR = Controlled Product Regulations; DOT = Department of Transportation; DSL = Domestic Substances List; EEC = European Economic Community; EINECS = European Inventory of Existing Commercial Chemical Substances; ELINCS = European List of Notified Chemical Substances; EPA = Environmental Protection Agency; HMIS = Hazardous Materials Information System; IARC = International Agency for Research on Cancer; IATA = International Air Transport Association; IDL = Ingredient Disclosure List; IMDG = International Maritime Dangerous Goods; LC50 = Lethal Concentration 50%; LD50 = Lethal Dose 50%; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Agency; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; SARA = Superfund Amendments and Reauthorization Act; SCBA = Self Contained Breathing Apparatus; TSCA = Toxic Substance Control Act; WHMIS = Workplace Hazardous Materials Information System.

End of MSDS 208

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Gluconic acid, zinc salt hydrate

ACC# 15782

Section 1 - Chemical Product and Company Identification

MSDS Name: Gluconic acid, zinc salt hydrate

Catalog Numbers: AC392010000 Synonyms: Zinc gluconate hydrate

Company Identification:
Acros Organics N.V.

One Reagent Lane Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01 For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent EINECS/ELINCS
Not available	Gluconic acid, zinc salt hydrate	unlisted

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Not available. Appearance: white powder.

Not available.

Target Organs: None known.

Potential Health Effects

Eve: May Cause eye irritation.

Skin: May cause skin irritation. May be harmful if absorbed through the skin.

Ingestion: May cause irritation of the digestive tract. May be harmful if swallowed.

Inhalation: May cause respiratory tract irritation. May be harmful if inhaled.

Chronic: Not available.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

https://fscimage.fishersci.com/msds/15782.htm (1 of 6) [3/24/2007 12:18:06 PM]

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

*ngestion: Get medical aid. Wash mouth out with water.

halation: Remove from exposure and move to fresh air immediately. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. **Extinguishing Media:** Use water spray, dry chemical, carbon dioxide, or chemical foam.

Flash Point: Not available.

Autoignition Temperature: > 155 deg C (> 311.00 deg F)

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: Not published.

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8. **Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container. Do not this chemical enter the environment.

Section 7 - Handling and Storage

Handling: Avoid breathing dust, mist, or vapor. Avoid contact with skin and eyes. Avoid ingestion and inhalation.

Storage: Store in a cool, dry place. Store in a tightly closed container.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate ventilation to keep airborne concentrations low. **Exposure Limits**

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Gluconic acid, zinc salt hydrate	none listed	none listed	none listed
Zinc, his(D-gluconato-O1,O2)-	none listed	none listed	none listed

OSHA Vacated PELs: Gluconic acid, zinc salt hydrate: No OSHA Vacated PELs are listed for this chemical. Zinc, bis(D-gluconato-O1,O2)-: No OSHA Vacated PELs are listed for this chemical.

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Personal Protective Equipment

Eves: Wear chemical splash goggles.

kin: Wear appropriate protective gloves to prevent skin exposure.

othing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Powder

Appearance: white Odor: odorless ph: Not available.

Vapor Pressure: Not available. Vapor Density: Not available. Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: Not available.

Freezing/Melting Point: Not available.

Decomposition Temperature: Not available.

Solubility: 100 g/l (20°C)

Specific Gravity/Density:Not available. Molecular Formula:C12H22O14Zn.xH2O

"olecular Weight:455.68

Section 10 - Stability and Reactivity

Chemical Stability: Not available.

Conditions to Avoid: Incompatible materials.

Incompatibilities with Other Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 4468-02-4: ZH3750000

LD50/LC50: CAS# 4468-02-4:

Oral, mouse: LD50 = 1290 mg/kg;

ircinogenicity:

CAS# 4468-02-4: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No data available.

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Teratogenicity: No data available.

Reproductive Effects: No data available.

Mutagenicity: No data available. Purotoxicity: No data available.

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.

Environmental: No information available.

Physical: No information available. **Other:** Do not empty into drains.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed. RCRA U-Series: None listed.

Section 14 - Transport Information

The state of the s	US DOT Canada TDG
Shipping Name:	No information available.
Hazard Class:	
UN Number:	
Packing Group:	·

Section 15 - Regulatory Information

US FEDERAL

TSCA

Gluconic acid, zinc salt hydrate is not listed on the TSCA inventory. It is for research and development use only.

CAS# 4468-02-4 is listed on the TSCA inventory.

"ealth & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

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Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

Section 313 No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 4468-02-4 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

propean Labeling in Accordance with EC Directives

..azard Symbols:

Not available.

Risk Phrases:

Safety Phrases:

S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 4468-02-4: 0

Canada - DSL/NDSL

CAS# 4468-02-4 is listed on Canada's DSL List.

Canada - WHMIS

not available.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

Section 16 - Additional Information

MSDS Creation Date: 2/08/2007 Revision #0 Date: Original.

information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of

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SAFETY DATA SHEET

1. Identification of the substance/preparation and of the company/undertaking

Identification of the product

Catalogue No: 66178

ID No.: 6617800

Product name: Ethyl n-butyrate

Manufacturer/supplier identification

Company:

VWR International Ltd, Merck House, Poole, Dorset, BH15 1TD, England

Telephone: 01202 669700 Telefax: 01202 665599

Emergency telephone No.: 01202 669700

2. Composition/information on ingredients

Chemical characterization

Organic liquid

Product name: Ethyl n-butyrate

CAS number: 105-54-4

EC-No.:

3. Hazards identification

Flammable.

4. First aid measures

Eye contact: Irrigate thoroughly with water. If discomfort persists obtain medical attention.

Inhalation: Remove from exposure.

Skin contact: Wash off thoroughly with soap and water.

Ingestion: Wash out mouth thoroughly with water. In severe cases obtain medical attention.

5. Fire-fighting measures

Special risks:

Flammable.

Suitable extinguishing media:

Water spray, foam, dry powder or carbon dioxide

6. Accidental release measures

Shut off all sources of ignition. Wear appropriate protective clothing.

Absorb on an inert absorbent, (e.g. BDH Spillage absorption granules), transfer to a suitable container and arrange removal by disposal company. Wash site of spillage thoroughly with water and detergent.

For large spillages liquids should be contained with sand or earth and both liquids and solids transferred to salvage containers. Any residues should be treated as for small spillages.

7. Handling and storage

Handling:

Storage:

Store at room temperature (15 to 25°C recommended). Keep well closed and protected from direct sunlight and moisture.

8. Exposure controls/personal protection

As appropriate to the situation and the quantity handled.

Respirator: Self-contained breathing apparatus Ventilation: Fume cupboard, flameproof

Gloves: Nitrile

Eye Protection: Goggles or face-shield

Other Precautions: Plastic apron, sleeves, boots - if handling large quantities

9. Physical and chemical properties

Product description

Colourless liquid, fruity odour

Melting temperature

-93°C

Boiling temperature

121°C

Density(g/ml)

0.88

Vapour pressure

n/a

-Density

n/a

Solubility in water

Practically insoluble

Flash point

26°C n/a

Explosion limits:

lower:

Auto-ignition temperature

463°C

10. Stability and reactivity

Stable.

May react with oxidising materials.

11. Toxicological information

Irritating to eyes. May irritate skin. May be harmful if ingested in large quantities.

Further data

LD50 13000 mg/kg oral, rat.

No evidence of carcinogenic properties. No evidence of mutagenic or teratogenic effects.

12. Ecological information

No environmental hazard is anticipated provided that the material is handled and disposed of with due care and attention.

13. Disposal considerations

Chemical residues are generally classified as special waste, and as such are covered by regulations which vary according to location. Contact your local waste disposal authority for advice, or pass to a chemical disposal company. Rinse out empty containers thoroughly before returning for recycling.

14. Transport information

UN-No.: 1180

IMDG class: 3.3

IMO:

Packaging group:

IATA:

Packaging group:

Correct technical name: ADR/RID:

15. Regulatory information

Labelling according to EC directives

Symbol:

R-phrases: R10 Flammable.

S-phrases: S16

Keep away from sources of ignition - No smoking.

EC-No.:

Local Regulations

UK Exposure Limits: None assigned

16. Other information

Date of issue:

18/08/94

Date of print:

07/01/02



Revision Date: 06/13/2007

Print Date: 6/15/2007

MSDS Number: R0000003

Version: 2.0

ETHYLENE GLYCOL 20005

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Ashland

Regulatory Information Number

1-800-325-3751

P.O. Box 2219

Telephone

614-790-3333

Columbus, OH 43216

Emergency telephone number

1-800-ASHLAND

(1-800-274-5263)

Product name

ETHYLENE GLYCOL

Product code

20005

Product Use Description

No data

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: liquid,, colourless

WARNING! MAY AFFECT THE CENTRAL NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. MAY BE HARMFUL IF INHALED OR SWALLOWED. MAY BE HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE EYE IRRITATION.

Potential Health Effects

Routes of Exposure

Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion - Industrial products are not meant to be swallowed

Eye Contact

Can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

Skin Contact

May cause mild skin irritation. Symptoms may include redness and burning of skin. Although rare, skin contact with ethylene glycol may cause allergic skin reaction (delayed skin rash which may be followed by blistering, scaling and other skin effects). Passage of this material into the body through the skin is possible, and may add to toxic effects from breathing or swallowing. Passage of this material into the body through the skin is possible, but it is unlikely that this would result in harmful effects during safe handling and use.

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ETHYLENE GLYCOL 20005

Ingestion

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. Liver, kidney and brain damage in humans has resulted from swallowing lethal or near-lethal amounts of ethylene glycol.

Inhalation

It is possible to breathe this material under certain conditions of handling and use (for example, during heating, spraying, or stirring). Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

Aggravated Medical Condition

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material:, lung (for example, asthma-like conditions), liver, kidney, central nervous system, Exposure to this material may aggravate any preexisting condition sensitive to a decrease in available oxygen, such as chronic lung disease, coronary artery disease or anemias.

Symptoms

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:, stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), cough, central nervous system excitation (giddiness, liveliness, light-headed feeling) followed by central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness) and other central nervous system effects, involuntary eye movement, cyanosis (causes blue coloring of the skin and nails from lack of oxygen), lung edema (fluid buildup in the lung tissue), acute kidney failure (sudden slowing or stopping of urine production), kidney damage, liver damage, convulsions, coma, and death

Target Organs

Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals:, reproductive effects, kidney damage, liver damage, kidney damage, liver damage, Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans:, kidney damage, liver damage

Carcinogenicity

This material is not expected to cause cancer in humans since it did not cause cancer in laboratory animals. This material is not listed as a carcinogen by the



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ETHYLENE GLYCOL 20005

International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA).

Reproductive Hazard

Ethylene glycol has caused birth defects in animal studies at high oral doses. However, it did not cause harm to the pregnant animal or to the fetus when applied to the skin of the pregnant animal.

Other Information

No data

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Concentration
ETHYLENE GLYCOL	107-21-1	<=100%

4. FIRST AID MEASURES

Eyes

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

Skin

Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention. Launder clothing before reuse.

Ingestion

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

Inhalation

If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

Notes to Physician

Hazards: Effects of acute ethylene glycol poisoning appear in three fairly distinct stages. The initial stage occurs shortly after exposure, lasts 6-12 hours, and is

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ETHYLENE GLYCOL 20005

characterized by central nervous system effects (transient exhilaration, nausea, vomiting, and in severe cases, coma, convulsions, and possible death). The second stage lasts from 12-36 hours after exposure and is initiated by the onset of coma. This phase is characterized by tachypnia, tachycardia, mild hypotension, cyanosis, and in severe cases, pulmonary edema, bronchopneumonia, cardiac enlargement, and congestive failure. The final stage occurs 24-72 post-exposure and is characterized by renal failure, ranging from a mild increase in blood urea nitrogen and creatinine followed by recovery, to complete anuria with acute tubular necrosis that can lead to death. Oxaluria is found in most cases. The most significant laboratory finding in ethylene glycol intoxication is severe metabolic acidosis.

Treatment: This product contains ethylene glycol. Ethanol decreases the metabolism of ethylene glycol to toxic metabolites. Ethanol should be administered as soon as possible in cases of severe poisoning since the elimination half-life of ethylene glycol is 3 hours. If medical care will be delayed several hours, give the patient three to four 1-ounce oral "shots" of 86-proof or higher whiskey before or during transport to the hospital. Fomepizole (4-methylpyrazole) is an effective antagonist of alcohol dehydrogenase, and as such, may be used as an antidote in the treatment of ethylene glycol poisoning. Hemodialysis effectively removes ethylene glycol and its metabolites from the body.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

carbon dioxide (CO2), dry chemical, water spray

Hazardous Combustion Products

May form:, alcohols, aldehydes, carbon dioxide and carbon monoxide, ethers, toxic fumes

Precautions for Fire-Fighting

Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively. Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). No special precautions necessary when fighting fires involving this product.

Flammability Class for Flammable Liquids

Combustible Liquid Class IIIB

6. ACCIDENTAL RELEASE MEASURES



Revision Date: 06/13/2007

Print Date: 6/15/2007 MSDS Number: R0000003

Version: 2.0

ETHYLENE GLYCOL 20005

Personal Precautions

No data

Environmental Precautions

No data

Methods for Cleaning Up

Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source, dike area of spill to prevent spreading, pump liquid to salvage tank. Remaining liquid may be taken up on sand, clay, earth, floor absorbent, or other absorbent material and shoveled into containers. Do not flush into sewers. Material should be placed in a container for recovery or transfer to a disposal facility. Absorb liquid on vermiculite, floor absorbent or other absorbent material. Persons not wearing proper personal protective equipment should be excluded from area of spill. Collect material with vacuum cleaner.

7. HANDLING AND STORAGE

Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Warning. Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without the presence of obvious ignition sources. Published "autoignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions.

Storage

Store in a cool, dry, ventilated area. Do not store near extreme heat, open flame, or sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

ETHYLENE GLYCOL

107-21-1

ACGIH

Ceiling Limit Value:

100 mg/m3

Aerosol.



Revision Date: 06/13/2007

Print Date: 6/15/2007 MSDS Number: R0000003

Version: 2.0

ETHYLENE GLYCOL 20005

General Advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Exposure Controls

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(s).

Eve Protection

Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. Consult your safety representative.

Skin and Body Protection

To prevent repeated or prolonged skin contact, wear impervious clothing and boots. Wear resistant gloves such as: Natural Rubber polyvinyl chloride polyvinyl alcohol Polyethylene neoprene -- unsupported neoprene - supported

Respiratory Protection

If workplace exposure limit(s) of product or any component is exceeded (see exposure guidelines), a NIOSH-approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH respirators (negative pressure type) under specified conditions (see your industrial hygienist). Engineering or administrative controls should be implemented to reduce exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state

Form

Colour

Odour

Boiling point/range Melting point/range

pН

Flash point

Evaporation rate

Explosion limits

Vapour pressure

liquid

viscous, colourless

mild, sweet

387.7 °F / 197.6 °C@ 101.3232 kPa

9°F/-13°C

No data

232 °F / 111 °C Closed Cup

< 1.00 (N-Butyl Acetate)

3.2 %(V) 15.3 %(V)

0.012265 kPa @ 77 °F / 25 °C

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Version: 2.0

ETHYLENE GLYCOL 20005

Vapour density

Density

2.14

1.114 g/cm3 @ 68.00 °F / 20.00 °C

9.28 lb/gal @ 68 °F / 20 °C completely soluble in water

Solubility

Partition coefficient (n-

octanol/water)

Autoignition temperature

No data

748 °F / 398 °C

10. STABILITY AND REACTIVITY

Stability

Stable.

Conditions to Avoid

Avoid contact with:, heat

Incompatible Products

Avoid contact with:, alkali and alkaline earth, alkali metals, strong acids, strong alkalis, strong oxidizing agents

Hazardous Decomposition Products

May form:, carbon dioxide and carbon monoxide

Hazardous Reactions

Product will not undergo hazardous polymerization.

Thermal Decomposition

No data

11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity

ETHYLENE GLYCOL

LD 50 Rat: 6,140 mg/kgLD 50 Mouse: 14,600

mg/kg

Acute Inhalation Toxicity

Acute Dermal Toxicity

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Version: 2.0

ETHYLENE GLYCOL 20005

ETHYLENE GLYCOL

LD 50 Rabbit: 10,611 mg/kg

12. ECOLOGICAL INFORMATION

Aquatic Toxicity

Acute and Prolonged Toxicity to Fish

No data

Acute Toxicity to Aquatic Invertebrates

No data

Environmental Fate and Pathways

No data

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Destroy by liquid incineration in accordance with applicable regulations. For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Ashland Distribution's Environmental Services Group at 800-637-7922. For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Ashland Distribution's Environmental Services Group at 800-637-7922.

14. TRANSPORT INFORMATION

Dangerous goods descriptions (if indicated above) may not reflect package size, quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

15. REGULATORY INFORMATION

Additional Regulations

US. Toxic Substances Control Act (TSCA) Section 4(a) Proposed Test Rules (40 CFR 799, Subpts B & D)

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ETHYLENE GLYCOL 20005

US. Toxic Substances Control Act (TSCA) Section 8(a) Inventory Update Rule (EPA Form U Instructions, App A)

US. High Production Volume Chemicals

US. Toxic Substances Control Act (TSCA) Section 4 - Master Testing List

US. OSHA Hazard Communication Standard: On One of the Floor Lists of the OSHA HCS (29 CFR 1910.1200).

SARA Hazard Classification

Acute Health Hazard

SARA 313 Component(s)

ETHYLENE GLYCOL

107-21-1

100%

OSHA Hazards

Moderate skin irritant Moderate eye irritant

	Health	Flammability	Reactivity	Other
HMIS	1*	1	0	
NFPA	1	1	0	

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).

Printing date 09/15/2006

Reviewed on 09/08/2006

1 Identification of substance:

Product details:

Product name: Ethyl propionate

Stock number: 36605
Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Emergency Phone: (978) 521-6300

CHEMTREC: (800) 424-9300 Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency information:

During normal hours the Health, Safety and Environmental Department.

After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:

Chemical characterization:

Description: (CAS#)

Ethyl propionate (CAS# 105-37-3): 100%

Identification number(s): EINECS Number: 203-291-4 EU Number: 607-028-00-8

3 Hazards identification

Hazard description:



F Highly flammable

Information pertaining to particular dangers for man and environment R 11 Highly flammable.
Classification system
HMIS ratings (scale 0-4)
(Hazardous Materials Identification System)



Health (acute effects) = 1
Flammability = 3
Reactivity = 1

4 First aid measures

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

(Contd. on page 2)

- USA -

Printing date 09/15/2006

Reviewed on 09/08/2006

Product name: Ethyl propionate

After swallowing Seek immediate medical advice.

(Contd. of page 1)

5 Fire fighting measures

Suitable extinguishing agents

Use carbon dioxide, extinguishing powder or foam. Water may be ineffective but may be used for cooling exposed containers.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders,

universal binders, sawdust). Ensure adequate ventilation.

Keep away from ignition sources.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

Handling

Information for safe handling:

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Prevent formation of aerosols.

Information about protection against explosions and fires:

Keep ignition sources away.

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

Storage

Requirements to be met by storerooms and receptacles:

Store in a cool location.

Information about storage in one common storage facility:

Do not store together with acids.

Do not store together with alkalies (caustic solutions).

Store away from water/moisture.

Keep away from heat and direct sunlight.

(Contd. on page 3)

- USA

Printing date 09/15/2006

Reviewed on 09/08/2006

Product name: Ethyl propionate

(Contd. of page 2)

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Not required.

Additional information: No data

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands: Impervious gloves

Eye protection: Safety glasses

Body protection: Protective work clothing.

9 Physical and chemical properties:

General Information	
Form:	Liquid
Color:	Clear
	Colorless
Odor:	Not determined
Change in condition	
Melting point/Melting range:	-73°C (-99°F)
Boiling point/Boiling range:	99°C (210°F)
Sublimation temperature / start:	Not determined
Flash point:	12°C (54°F)
Ignition temperature:	475°C (887°F)
Decomposition temperature:	Not determined
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures is possible.
Explosion limits:	
Lower:	1.8 Vol %
Upper:	11 Vol %
Vapor pressure at 27°C (81°F):	53 hPa (40 mm Hg)
Density at 20°C (68°F):	0.891 g/cm³

(Contd. on page 4)

USA

Printing date 09/15/2006

Reviewed on 09/08/2006

Product name: Ethyl propionate

(Contd. of page 3)

Solubility in / Miscibility with

Alcohols:

Partly miscible

10 Stability and reactivity

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided:

Acids

Bases

Water/moisture

Heat

Dangerous reactions No dangerous reactions known

Dangerous products of decomposition: Carbon monoxide and carbon dioxide

11 Toxicological information

Acute toxicity:

Γ	LD/LC50 values that are relevant for classification:		
	Oral	LD50	8732 mg/kg (rat)
	Irritation of skin	moderate	500 mg/24H (rbt)
	Irritation of eyes	moderate	100 mg (rbt)

Primary irritant effect:

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: No sensitizing effects known.

Subacute to chronic toxicity: Subacute to chronic toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:

Behavioral - somnolence (general depressed activity).

Lungs, Thorax, or Respiration - other changes.

Gastrointestinal - other changes.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:

General notes:

Do not allow undiluted product or large quantities of it to reach ground -water, water course or sewage system. Do not allow material to be released to the environment without proper

governmental permits.

13 Disposal considerations

Product:

Recommendation

Consult state, local or national regulations to ensure proper disposal. (Contd. on page 5)

Printing date 09/15/2006

Reviewed on 09/08/2006

Product name: Ethyl propionate

(Contd. of page 4)

Uncleaned packagings:

 $\textbf{Recommendation:} \ \, \textit{Disposal must be made according to official regulations.}$

14 Transport information

DOT regulations:



Hazard class:

3

Identification number:

UN1195

Packing group:

II

Proper shipping name (technical

name): Label ETHYL PROPIONATE

.3

Land transport ADR/RID (cross-border)



ADR/RID class:

3 (F1) Flammable liquids

Danger code (Kemler):

33 1195

UN-Number:

II

Packaging group: Description of goods:

1195 ETHYL PROPIONATE

Maritime transport IMDG:



IMDG Class:

3

UN Number:

1195

Label

3

Packaging group:

ΙΙ

Proper shipping name:

ETHYL PROPIONATE

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class:

3

UN/ID Number:

1195

Label

3

Packaging group:

ΙΙ

Proper shipping name:

ETHYL PROPIONATE

(Contd. on page 6)

- USA

Printing date 09/15/2006

Reviewed on 09/08/2006

Product name: Ethyl propionate

(Contd. of page 5)

15 Regulations

Product related hazard informations:

Hazard symbols:

F Highly flammable

Risk phrases:

11 Highly flammable.

Safety phrases:

- 16 Keep away from sources of ignition No smoking.
- 23 Do not breathe gas/fumes/vapour/spray.
- 24 Avoid contact with skin.
- 29 Do not empty into drains.
- 33 Take precautionary measures against static discharges.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use:

For use only by technically qualified individuals.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department. Contact: Darrell R. Sanders

- USA



aterial Safety Data Sheet

Catalog Number: 221713 Revision date: 26-Apr-2006

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY INFORMATION

Catalog Number: 221713

Product name: 3-ETHYL PENTANE

Synonyms: Triethylmethane

Supplier:

MP Biomedicals, LLC 29525 Fountain Parkway Solon, OH 44139

tel: 440-337-1200

Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components

CAS Number

Weight %

ACGIH Exposure Limits: None

OSHA Exposure Limits:

None

3-ETHYL PENTANE

617-78-7

90 - 100%

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Harmful by inhalation, in contact with skin and if swallowed., Harmful to flora, fauna, soil organisms and aquatic organisms., Flammable

Category of Danger:

Flammable, Dangerous for the environment, Harmful

Principle routes of exposure: Skin Inhalation: Harmful by inhalation. Ingestion: Harmful if swallowed.

Skin contact: Harmful in contact with skin. Eye contact: Risk of serious damage to eyes

Statements of hazard HARMFUL IF SWALLOWED. MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR

INHALED. Flammable

Statement of Spill or Leak - ANSI Label Eliminate all ignition sources. Absorb and/or contain spill with inert materials (e.g., sand, vermiculite). Then place in appropriate container. For large spills, use water spray to disperse vapors, flush spill area. Prevent runoff from entering waterways or sewers.

Precautions - ANSI Label Do not breathe vapors or spray mist Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling.

4. FIRST AID MEASURES

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Catalog Number: 221713

Product name: 3-ETHYL PENTANE

Page 1 of 6

MP Biomedicals, LLC www.mpbio.com

Inhalation: Move to fresh air. Call a physician immediately.

Skin contact: Rinse immediately with plenty of water and seek medical advice

Ingestion: Do not induce vomiting without medical advice.

Eve contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Protection of first-aiders: No information available

Special protective equipment for firefighters:

Medical conditions aggravated by exposure: None known

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:

Specific hazards:

Use dry chemical, CO2, water spray or `alcohol` foam. High flammability. Explosion hazard when in contact with

heat or flame

Unusual hazards: None known

Wear self contained breathing apparatus for fire fighting if necessary. In the event of fire and/or explosion do not

breathe fumes.

Water mist may be used to cool closed containers.

Not determined

Not determined Not determined

Specific methods: Flash point:

Autoignition temperature:

NFPA rating:

NFPA Health:

NFPA Flammability:

NFPA Reactivity:

3

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Environmental precautions:

Methods for cleaning up:

Use personal protective equipment.
Prevent product from entering drains.

Ground and bond containers when transferring material

7. HANDLING AND STORAGE

Storage:

ROOM TEMPERATURE

Handling:

Use only in area provided with appropriate exhaust

ventilation.

Safe handling advice:

Wear personal protective equipment. Remove and wash

contaminated clothing before reuse.

Technical measures/storage conditions:

Keep container tightly closed in a dry and well-ventilated place. Keep away from open flames, hot surfaces and

sources of ignition

Incompatible products:

Oxidising and spontaneously flammable products

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation, especially in confined areas.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

Hand protection: Pvc or other plastic material gloves

Skin and body protection: Impervious clothing Long sleeved clothing

Eye protection: If splashes are likely to occur, wear: Safety glasses with side-shields Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.

Catalog Number: 221713

Product name: 3-ETHYL PENTANE

Page 2 of 6



9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:

Formula:

Melting point/range: Boiling point/range:

Density:

Vapor pressure: Evaporation rate: Vapor density:

Solubility (in water):

Flash point: Autoignition temperature: Liquid

C7H16 -118°C

93°C 0.6982 g/ml

No data available

No data available No data available

Insoluble

Not determined Not determined

10. STABILITY AND REACTIVITY

Stability:

Polymerization:

Hazardous decomposition products:

Materials to avoid:

Conditions to avoid:

Stable under recommended storage conditions.

None under normal processing.

Thermal decomposition can lead to release of irritating

gases and vapours such as carbon oxides.

Strong oxidising agents

Exposure to air or moisture over prolonged periods.

11. TOXICOLOGICAL INFORMATION

Product Information

Acute toxicity

Components 3-ETHYL PENTANE **RTECS Number:**

Not Available

Selected LD50s and LC50s

Not Determined

Chronic toxicity:

Chronic exposure may cause nausea and vomiting, higher exposure causes

unconsciousness.

Local effects:

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and

vomiting.

Specific effects:

May include moderate to severe erythema (redness) and moderate edema (raised

skin), nausea, vomiting, headache.

Primary irritation: Carcinogenic effects:

Mutagenic effects: Reproductive toxicity: No data is available on the product itself.

No data is available on the product itself. No data is available on the product itself. No data is available on the product itself.

12. ECOLOGICAL INFORMATION

Mobility:

Bioaccumulation: **Ecotoxicity effects:** Aquatic toxicity:

No data available No data available

No data available

May cause long-term adverse effects in the aquatic

environment.

Catalog Number: 221713

Product name: 3-ETHYL PENTANE

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MP Biomedicals, LLC

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Components

U.S. DOT - Appendix B -

Marine Pollutan

U.S. DOT - Appendix B -**Severe Marine Pollutants** United Kingdom - The Red

3-ETHYL PENTANE

Not Listed

Not Listed

List: Not Listed

Components

Germany VCI (WGK)

(WHO) - Drinking Water

3-ETHYL PENTANE

Not Listed

Not Listed

Data Not Listed

Components

Ecotoxicity - Freshwater

Ecotoxicity - Microtox Data Ecotoxicity - Water Flea

3-ETHYL PENTANE

Algae Data Not Listed

Not Listed

Data Not Listed

Components

EPA - ATSDR Priority List

EPA - HPV Challenge

California - Priority Toxic

3-ETHYL PENTANE

Not Listed

Program Chemical List Not Listed

Pollutants Not Listed

Components 3-ETHYL PENTANE California - Priority Toxic Pollutants

Not Listed

California - Priority Toxic Pollutants

Not Listed

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished

with this material may be hazardous. Do not re-use empty containers

Contaminated packaging:

Methods for cleaning up:

Ground and bond containers when transferring material

14. TRANSPORT INFORMATION

UN/Id No:

1265

DOT:

Proper shipping name: IATA Hazard Label(s):

Pentanes liquid Flammable Liquid

Hazard Class

Flammable liquid

Packing group:

Emergency Response Guide Number (ERG):

128

Components

U.S. DOT - Appendix A Table 1 - Reportable Quantities

3-ETHYL PENTANE

Not Listed

TDG (Canada):

WHMIS hazard class:

B2 flammable liquids



IMDG/IMO

Catalog Number: 221713

Product name: 3-ETHYL PENTANE

Page 4 of 6

MP Biomedicals, LLC www.mpbio.com

Proper shipping name:

Pentanes liquid

IMDG - Hazard Classifications

Not Applicable

Components

U.S. DOT - Appendix B - Marine Pollutan U.S. DOT - Appendix B - Severe Marine

3-ETHYL PENTANE Not Listed **Pollutants** Not Listed

IMO-labels:

15. REGULATORY INFORMATION

International Inventories

Components

3-ETHYL PENTANE

Inventory - United States TSCA - Sect. 8(b)

Canada DSL Inventory List -

Inventory - China:

EU EINECS List -Inventory - Japan:

Korean KECL: **Philippines PICCS:** Not Listed

Not Listed Present

210-529-0; C7H16

2-7

KE-14012 Present

U.S. regulations:

Components

California Proposition 65 Massachusetts Right to New Jersey Right to

Know List:

Pennsylvania Right to Know

3-ETHYL PENTANE

Not Listed

Not Listed

Know List: Not Listed

Not Listed

Components

Florida substance List:

Rhode Island Right to

Illinois - Toxic Air

Connecticut - Hazardous Air **Pollutants**

3-ETHYL PENTANE

Not Listed

Know List: Not Listed

Contaminants Not Listed

Not Listed

Components

SARA 313 Emission reporting/Toxic Release 302 Extremely Haz

CERCLA/SARA - Section NTP:

IARC:

3-ETHYL PENTANE

of Chemicals Not Listed

Not Listed

None

SARA 313 Notification:

The above is your notification as to the SARA 313 listing for this product(s) pursuant to Section 313 of Title III of the Superfund Ammendments and Reauthorization Act of 1986 and 40 CFR Part 372.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2499 (in

Washington, DC or Alaska).

State Notification:

The above information is your notice as to the Right-to-Know listings of the stated product(s). Individual states will list chemicals for a variety of reasons including, but not limited to, the compounds toxicity; carcinogenic, tumorigenic and/or reproductive hazards; and the compounds environmental impact if accidentally released.

16. OTHER INFORMATION

Prepared by: Health & Safety

Catalog Number: 221713

Product name: 3-ETHYL PENTANE

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Disclaimer: The information and recommendations contained herein are based upon tests believed to be reliable. However, MP Biomedicals does not guarantee the accuracy or completeness NOR SHALL ANY OF THIS INFORMATION CONSTITUTE A WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE. Adjustment to conform to actual conditions of usage maybe required. MP Biomedicals assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

End of Safety Data Sheet

Catalog Number: 221713

Product name: 3-ETHYL PENTANE

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Material Safety Data Sheet

Catalog Number: 212808 Revision date: 25-Apr-2006

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY INFORMATION

Catalog Number: 212808

Product name: 2-ETHYLHEXANE

Synonyms: 2-Ethylhexane

Supplier:

MP Biomedicals, LLC 29525 Fountain Parkway

Solon, OH 44139 tel: 440-337-1200

Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components 2-ETHYLHEXANE **CAS Number** 589-81-1

Weight % 90 - 100%

ACGIH Exposure Limits: None **OSHA Exposure Limits:**

None

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Harmful by inhalation, in contact with skin and if swallowed., Harmful to flora, fauna, soil organisms and aquatic organisms., Flammable

Category of Danger:

Flammable, Dangerous for the environment, Harmful

Principle routes of exposure: Skin Inhalation: Harmful by inhalation. Ingestion: Harmful if swallowed.

Skin contact: Harmful in contact with skin. **Eye contact:** Risk of serious damage to eyes

Statements of hazard HARMFUL IF SWALLOWED. MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR

INHALED. Flammable

Statement of Spill or Leak - ANSI Label Eliminate all ignition sources. Absorb and/or contain spill with inert materials (e.g., sand, vermiculite). Then place in appropriate container. For large spills, use water spray to disperse vapors, flush spill area. Prevent runoff from entering waterways or sewers.

Precautions - ANSI Label Keep away from heat, sparks and flame. Keep containers closed. Use only with adequate ventilation. Do not breathe vapors or spray mist Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling.

4. FIRST AID MEASURES

Catalog Number: 212808

Product name: 2-ETHYLHEXANE

Page 1 of 6

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Inhalation: Move to fresh air. Call a physician immediately.

Skin contact: Rinse immediately with plenty of water and seek medical advice

Ingestion: Do not induce vomiting without medical advice.

Eve contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Protection of first-aiders: No information available

Medical conditions aggravated by exposure: None known

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:

Specific hazards:

Unusual hazards:

Special protective equipment for firefighters:

Specific methods:

Flash point:

Autoignition temperature:

NFPA rating:

NFPA Health:

NFPA Reactivity:

NFPA Flammability:

3 0 Use dry chemical, CO2, water spray or 'alcohol' foam.

Flammable Extremely flammable

None known

Wear self contained breathing apparatus for fire fighting if

necessary. In the event of fire and/or explosion do not breathe fumes.

Water mist may be used to cool closed containers.

13.8°C

Not determined

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Remove all sources of ignition. Use personal protective

equipment.

Environmental precautions: Methods for cleaning up:

Do not flush into surface water or sanitary sewer system. Soak up with inert absorbent material. Ground and bond

containers when transferring material

7. HANDLING AND STORAGE

Storage:

ROOM TEMPERATURE

Handling:

Use only in area provided with appropriate exhaust

ventilation.

Safe handling advice:

Wear personal protective equipment. Remove and wash

contaminated clothing before reuse.

Technical measures/storage conditions:

Keep away from heat and sources of ignition Keep container

tightly closed in a dry and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition

Incompatible products:

Oxidising and spontaneously flammable products

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation, especially in confined areas.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

Hand protection: Pvc or other plastic material gloves

Skin and body protection: Impervious clothing Long sleeved clothing

Eye protection: If splashes are likely to occur, wear: Safety glasses with side-shields

Catalog Number: 212808

Product name: 2-ETHYLHEXANE

Page 2 of 6

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.



9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:

Formula:

Melting point/range: Boiling point/range:

Density:

Vapor pressure: Evaporation rate: Vapor density: Solubility (in water):

Flash point:

Autoignition temperature:

Liquid

C8H18

No data available at this time.

119°C

0,70582 g/ml No data available

No data available

No data available No data available

13.8°C

Not determined

10. STABILITY AND REACTIVITY

Stability:

Polymerization:

Hazardous decomposition products:

Materials to avoid: Conditions to avoid: Stable under recommended storage conditions.

None under normal processing.

Thermal decomposition can lead to release of irritating

gases and vapours such as carbon oxides.

Strong oxidising agents

Exposure to air or moisture over prolonged periods.

11. TOXICOLOGICAL INFORMATION

Product Information

Acute toxicity

Components

RTECS Number:

Selected LD50s and LC50s

2-ETHYLHEXANE

Not Available

Not Determined

Chronic toxicity:

Chronic exposure may cause nausea and vomiting, higher exposure causes

unconsciousness.

Local effects:

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and

vomiting.

Specific effects:

May include moderate to severe erythema (redness) and moderate edema (raised

skin), nausea, vomiting, headache.

Primary irritation:

Carcinogenic effects: Mutagenic effects: Reproductive toxicity: No data is available on the product itself.

No data is available on the product itself. No data is available on the product itself. No data is available on the product itself.

12. ECOLOGICAL INFORMATION

Mobility:

Bioaccumulation: Ecotoxicity effects: Aquatic toxicity: No data available

No data available No data available

May cause long-term adverse effects in the aquatic

environment.

Catalog Number: 212808

Product name: 2-ETHYLHEXANE

Page 3 of 6

MP Biomedicals, LLC

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Components

U.S. DOT - Appendix B -

U.S. DOT - Appendix B -

United Kingdom - The Re

Marine Pollutan

Not Listed Not Listed

Severe Marine Pollutants Not Listed

List:

2-ETHYLHEXANE

Germany VCI (WGK)

World Health Organization (WHO) - Drinking Water

Ecotoxicity - Fish Species Data

2-ETHYLHEXANE

Not Listed

Not Listed

Not Listed

Components

Components

Ecotoxicity - Freshwater

Ecotoxicity - Microtox Data Ecotoxicity - Water Flea

2-ETHYLHEXANE

Algae Data Not Listed

Data

Not Listed

Not Listed

Components

EPA - ATSDR Priority List

EPA - HPV Challenge Program Chemical List California - Priority Toxic

2-ETHYLHEXANE

Not Listed

Not Listed

Not Listed

Pollutants Not Listed

Components 2-ETHYLHEXANE California - Priority Toxic Pollutants

California - Priority Toxic Pollutants

Not Listed

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished

with this material may be hazardous. Do not re-use empty containers

Contaminated packaging:

Methods for cleaning up:

Soak up with inert absorbent material. Ground and bond

containers when transferring material

14. TRANSPORT INFORMATION

UN/Id No:

1206

DOT:

Proper shipping name:

IATA Hazard Label(s):

Hazard Class

Packing group:

Heptanes

Flammable Liquid

Flammable liquid

Emergency Response Guide Number (ERG):

128

Components

U.S. DOT - Appendix A Table 1 - Reportable Quantities

2-ETHYLHEXANE

Not Listed

TDG (Canada):

WHMIS hazard class:

B2 flammable liquids

Catalog Number: 212808

Product name: 2-ETHYLHEXANE

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IMDG/IMO

Proper shipping name:

Heptanes

IMDG - Hazard Classifications

Not Applicable

Components

U.S. DOT - Appendix B - Marine Pollutan U.S. DOT - Appendix B - Severe Marine

Pollutants

2-ETHYLHEXANE

Not Listed

Not Listed

IMO-labels:

15. REGULATORY INFORMATION

International Inventories

Components

2-ETHYLHEXANE

Inventory - United States TSCA - Sect. 8(b)

Canada DSL Inventory List -Canada NDSL Inventory List -

Inventory - China:

EU EINECS List -

Inventory - Japan:

Korean KECL:

Present

Not Listed C8H18 Present

209-660-6; C8H18

2-8

KE-24151

U.S. regulations:

Components

California Proposition 65 Massachusetts Right to New Jersey Right to

Know List:

Know List:

Pennsylvania Right to Know List:

2-ETHYLHEXANE

Not Listed

Not Listed

Not Listed

Components

Florida substance List:

Rhode Island Right to Know List:

Illinois - Toxic Air Contaminants

Connecticut - Hazardous Air

Not Listed

2-ETHYLHEXANE

Not Listed

Not Listed

Not Listed

Components

SARA 313 Emission reporting/Toxic Release

CERCLA/SARA - Section NTP: 302 Extremely Haz

IARC:

2-ETHYLHEXANE

of Chemicals Not Listed

Not Listed

None

None

SARA 313 Notification:

The above is your notification as to the SARA 313 listing for this product(s) pursuant to Section 313 of Title III of the Superfund Ammendments and Reauthorization Act of 1986 and 40 CFR Part 372.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2499 (in

Washington, DC or Alaska).

State Notification:

The above information is your notice as to the Right-to-Know listings of the stated product(s). Individual states will list chemicals for a variety of reasons including, but not limited to, the compounds toxicity; carcinogenic, tumorigenic and/or reproductive hazards; and the compounds environmental impact if accidentally released.

Catalog Number: 212808

Product name: 2-ETHYLHEXANE

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16. OTHER INFORMATION

Prepared by: Health & Safety

Disclaimer: The information and recommendations contained herein are based upon tests believed to be reliable. However, MP Biomedicals does not guarantee the accuracy or completeness NOR SHALL ANY OF THIS INFORMATION CONSTITUTE A WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE. Adjustment to conform to actual conditions of usage maybe required. MP Biomedicals assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

End of Safety Data Sheet

Catalog Number: 212808

Product name: 2-ETHYLHEXANE

Page 6 of 6

Printing date 12/05/2006

Reviewed on 08/07/2006

1 Identification of substance:

Product details:

Product name: Ethyl formate

Stock number:

A11113 L03027

Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Emergency Phone: (978) 521-6300

CHEMTREC: (800) 424-9300 Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency information:

During normal hours the Health, Safety and Environmental Department.

After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:

Chemical characterization:

Description: (CAS#)

Ethyl formate (CAS# 109-94-4); 100%

Identification number(s): EINECS Number: 203-721-0 EU Number: 607-015-00-7

3 Hazards identification

Hazard description:





Xn Harmful

F Highly flammable

Information pertaining to particular dangers for man and environment

R 11 Highly flammable.

R 20/22 Harmful by inhalation and if swallowed.

R 36/37 Irritating to eyes and respiratory system.

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH 1
FIRE 2
REACTIVITY 1

Health (acute effects) = 1
Flammability = 2

Reactivity = 1

4 First aid measures

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

(Contd. on page 2)

Printing date 12/05/2006

Reviewed on 08/07/2006

Product name: Ethyl formate

(Contd. of page 1)

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.

5 Fire fighting measures

Suitable extinguishing agents

CO2, extinguishing powder or water spray. Fight larger fire with alcohol resistant foam.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Keep away from ignition sources.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

Handling

Information for safe handling:

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

Keep ignition sources away.

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

Gases can be produced if heated in sealed containers, causing possible rupture or explosion.

Storage

Requirements to be met by storerooms and receptacles:

Store in a cool location.

(Contd. on page 3)

- USA

Printing date 12/05/2006

Reviewed on 08/07/2006

Product name: Ethyl formate

(Contd. of page 2)

Information about storage in one common storage facility:

Do not store together with strongly basic or oxidizing materials.

Protect from heat.

Store away from water/moisture.

Further information about storage conditions:

Keep container tightly sealed.

Protect from humidity and water.

Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

	ppm
ACGIH TLV	100
Austria TWA	100
Belgium TWA	100
Denmark TWA	100
Finland TWA	100; 150-STEL
France TWA	100
Germany TWA	100
Ireland TWA	100; 150-STEL
Netherlands TWA	100
Poland TWA	100
Switzerland TWA	100; 200-STEL
United Kingdom TWA	100; 150~STEL
IISA PET.	100

Components with limit values that require monitoring at the workplace: Additional information: No data

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Breathing equipment:

Conoral Information

Use suitable respirator when high concentrations are present.

Protection of hands: Impervious gloves

Eye protection: Safety glasses

Body protection: Protective work clothing.

9 Physical and chemical properties:

Generar	THITOTHECTON	

Form: Color: Clear liquid Colorless

(Contd. on page 4)

· USA

Printing date 12/05/2006

Reviewed on 08/07/2006

Product name: Ethyl formate

	(Contd. of page	
Odor:	Pleasant	
	Aromatic	
Change in condition		
Melting point/Melting range:	-80°C (-112°F)	
Boiling point/Boiling range:	54°C (129°F)	
Sublimation temperature / start:	Not determined	
Flash point:	-19°C (-2°F)	
Ignition temperature:	454°C (849°F)	
Decomposition temperature:	Not determined	
Auto igniting:	Self igniting at raised temperature.	
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures is possible.	
Explosion limits:		
Lower:	2.8 Vol %	
Upper:	16 Vol %	
Vapor pressure at 20°C (68°F):	0.0975 hPa (0 mm Hg)	
Density at 20°C (68°F):	0.9170 g/cm³	
Solubility in / Miscibility with		
Water:	Fully miscible	
Alcohols:	Soluble	
Organic solvents:	Soluble in ether.	
	Soluble in acetone.	

10 Stability and reactivity

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided:

Oxidizing agents

Bases

Heat

Water/moisture

Dangerous reactions

Unstable in the presence of bases which can lead to a vigorous reverse reaction that produces carbon monoxide gas, causing a possible explosion in a closed container.

Dangerous products of decomposition: Carbon monoxide and carbon dioxide

11 Toxicological information

Acute toxicity:

LD/LC50 values that are relevant for classification:				
Oral	LD50	1110 mg/kg (gpg)		***************************************
		1850 mg/kg (rat)		
		2075 mg/kg (rbt)		\$
Dermal	LD50	>20 mL/kg (rbt)		
Inhalative	LCLo/4H	8000 ppm/4H (rat)		
- North Tage against the Control of			(Contd.	on page

USA

Printing date 12/05/2006

Reviewed on 08/07/2006

Product name: Ethyl formate

(Contd. of page 4)

Irritation of skin | mild 460 mg (rbt)

Primary irritant effect:

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: No sensitizing effects known.

Other information (about experimental toxicology):

Tumorigenic effects have been observed on tests with laboratory animals.

Subacute to chronic toxicity:

Ethyl formate can irritate the eyes and, more severely, the respiratory system. Ingestion or inhalation causes somnolence, dyspnea, and gastrointestinal disturbances. Laboratory experiments show that tumors can occur when applied periodically to the skin.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for components in this product.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:

General notes:

Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations

Product:

Recommendation

Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations. Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

DOT regulations:



Hazard class:

Identification number:

UN1190

Packing group:

Proper shipping name (technical

name):

ETHYL FORMATE

(Contd. on page 6)

Printing date 12/05/2006

Reviewed on 08/07/2006

Product name: Ethyl formate

(Contd. of page 5)

Label

3

Land transport ADR/RID (cross-border)



ADR/RID class:

3 (F1) Flammable liquids

Danger code (Kemler):

33

UN-Number:

1190

Packaging group:

II

Description of goods:

1190 ETHYL FORMATE

Maritime transport IMDG:



IMDG Class:

3

UN Number:

1190

Labe1

3

Packaging group:

II

Proper shipping name:

ETHYL FORMATE

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class:

3

UN/ID Number:

1190

Label

3

Packaging group:

TT

Proper shipping name:

ETHYL FORMATE

15 Regulations

Product related hazard informations:

Hazard symbols:

Xn Harmful

F Highly flammable

Risk phrases:

11 Highly flammable.

20/22 Harmful by inhalation and if swallowed.

36/37 Irritating to eyes and respiratory system.

Safety phrases:

- 9 Keep container in a well-ventilated place.
- 16 Keep away from sources of ignition No smoking.
- 24 Avoid contact with skin.
- 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- 33 Take precautionary measures against static discharges.

(Contd. on page 7)

- USA

Printing date 12/05/2006

Reviewed on 08/07/2006

Product name: Ethyl formate

(Contd. of page 6)

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use:

For use only by technically qualified individuals.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department. Contact: Darrell R. Sanders

USA



Material Safety Data Sheet

Catalog Number: 221711 Revision date: 26-Apr-2006

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY INFORMATION

Catalog Number: 221711

Product name: ETHYL CYCLOPENTANE

Supplier:

MP Biomedicals, LLC 29525 Fountain Parkway Solon, OH 44139 tel: 440-337-1200

Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components ETHYL CYCLOPENTANE **CAS Number** 1640-89-7

Weight % 90 - 100%

ACGIH Exposure Limits:

OSHA Exposure Limits:

None

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Flammable

Category of Danger:

Flammable

Principle routes of exposure: Skin

Inhalation: May cause irritation of respiratory tract

Ingestion: May be harmful if swallowed.

Skin contact: May cause allergic skin reaction

Eye contact: Avoid contact with eyes

Statements of hazard Flammable

Statement of Spill or Leak - ANSI Label Eliminate all ignition sources. Absorb and/or contain spill with inert materials (e.g., sand, vermiculite). Then place in appropriate container. For large spills, use water spray to disperse vapors, flush spill area. Prevent runoff from entering waterways or sewers.

Precautions - ANSI Label Keep away from heat, sparks and flame. Keep containers closed. Use only with adequate ventilation. Do not breathe vapors or spray mist Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling.

4. FIRST AID MEASURES

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Inhalation: Move to fresh air. Call a physician immediately.

Skin contact: Rinse immediately with plenty of water and seek medical advice

Ingestion: Do not induce vomiting without medical advice.

Catalog Number: 221711

Product name: ETHYL CYCLOPENTANE

Page 1 of 6

MP Biomedicals, LLC www.mpbio.com

Eye contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Protection of first-aiders: No information available

Medical conditions aggravated by exposure: None known

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:

Carbon dioxide (CO2), Dry chemical, Foam, Water may be

ineffective., Use dry chemical, CO2, water spray or 'alcohol'

foam.

Specific hazards:

Dangerous fire hazard. Dangerous explosion hazard when exposed to heat or flame. Easily forms explosive mixtures in

air. Extremely flammable

Unusual hazards:

Special protective equipment for firefighters:

None known

Wear self contained breathing apparatus for fire fighting if necessary. In the event of fire and/or explosion do not

breathe fumes.

Water mist may be used to cool closed containers.

15.5°C

260 °C (500 °F)

Specific methods:

Flash point:

Autoignition temperature:

NFPA rating:

NFPA Health:

1

NFPA Flammability: NFPA Reactivity:

3

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Remove all sources of ignition. Use personal protective

equipment.

Environmental precautions: Methods for cleaning up:

Do not flush into surface water or sanitary sewer system. Soak up with inert absorbent material. Ground and bond

containers when transferring material

7. HANDLING AND STORAGE

Storage:

ROOM TEMPERATURE

Handling:

Use only in area provided with appropriate exhaust

ventilation.

Safe handling advice:

Wear personal protective equipment. Remove and wash

contaminated clothing before reuse.

Technical measures/storage conditions:

Keep away from heat and sources of ignition Keep container

tightly closed in a dry and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition

Incompatible products:

Oxidising and spontaneously flammable products

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation, especially in confined areas.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and

protective suit.

Hand protection: Pvc or other plastic material gloves

Skin and body protection: Impervious clothing Long sleeved clothing

Eye protection: If splashes are likely to occur, wear: Safety glasses with side-shields Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.

Catalog Number: 221711

Product name: ETHYL CYCLOPENTANE

Page 2 of 6



9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor

Physical state:

Formula: Molecular weight:

Melting point/range: Boiling point/range:

Density:

Vapor pressure: Evaporation rate: Vapor density: Solubility (in water):

Flash point:

Autoignition temperature:

Colorless; gasoline-like odor

Liquid C7-H14

98.19 -138 °C (-216 °F)

103 °C (218 °F)

0.763 at 20 °C (water = 1)

No data available No data available 3.4 (air = 1) Insoluble 15.5°C

260 °C (500 °F)

10. STABILITY AND REACTIVITY

Stability:

Polymerization:

Hazardous decomposition products:

Materials to avoid: Conditions to avoid: Stable under recommended storage conditions.

None under normal processing.

Thermal decomposition can lead to release of irritating

gases and vapours such as carbon oxides.

Strong oxidising agents

Exposure to air or moisture over prolonged periods.

11. TOXICOLOGICAL INFORMATION

Product Information

Acute toxicity

Components

ETHYL CYCLOPENTANE

RTECS Number:

GY4450000

Selected LD50s and LC50s

Not Determined

Chronic toxicity:

Chronic exposure may cause nausea and vomiting, higher exposure causes

unconsciousness.

Local effects:

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and

vomiting.

Specific effects:

May include moderate to severe erythema (redness) and moderate edema (raised

skin), nausea, vomiting, headache.

Primary irritation:
Carcinogenic effects:

Mutagenic effects: Reproductive toxicity: No data is available on the product itself.

No data is available on the product itself. No data is available on the product itself. No data is available on the product itself.

12. ECOLOGICAL INFORMATION

Mobility:

Bioaccumulation: Ecotoxicity effects: Aquatic toxicity: No data available No data available No data available

May cause long-term adverse effects in the aquatic

environment.

Catalog Number: 221711

Product name: ETHYL CYCLOPENTANE

Page 3 of 6

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Components

U.S. DOT - Appendix B -

Marine Pollutan

Not Listed

U.S. DOT - Appendix B -**Severe Marine Pollutants**

Not Listed

United Kingdom - The Re

List: Not Listed

Components

Components

Germany VCI (WGK)

World Health Organization (WHO) - Drinking Water

Ecotoxicity - Fish Species Data

ETHYL CYCLOPENTANE

ETHYL CYCLOPENTANE

Not Listed

Not Listed

Not Listed

Ecotoxicity - Freshwater

Ecotoxicity - Microtox Data Ecotoxicity - Water Flea

Data

ETHYL CYCLOPENTANE

ETHYL CYCLOPENTANE

Algae Data Not Listed

Not Listed

Not Listed

Components

EPA - ATSDR Priority List

EPA - HPV Challenge Program Chemical List California - Priority Toxic

Not Listed

Pollutants Not Listed

Components

ETHYL CYCLOPENTANE

California - Priority Toxic Pollutants

Not Listed

Not Listed

California - Priority Toxic Pollutants

Not Listed

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished

with this material may be hazardous.

Contaminated packaging:

Methods for cleaning up:

Do not re-use empty containers

Soak up with inert absorbent material. Ground and bond

containers when transferring material

14. TRANSPORT INFORMATION

UN/Id No:

1993

DOT:

Proper shipping name: IATA Hazard Label(s):

Hazard Class

Flammable liquid, n.o.s.

Flammable Liquid

3 -

Flammable liquid

Packing group:

Emergency Response Guide Number (ERG):

128

U.S. DOT - Appendix A Table 1 - Reportable Quantities

ETHYL CYCLOPENTANE

Not Listed

TDG (Canada):

WHMIS hazard class:

B2 flammable liquids



Catalog Number: 221711

Product name: ETHYL CYCLOPENTANE

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MP Biomedicals, LLC

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IMDG/IMO

Proper shipping name:

Flammable liquid, n.o.s.

IMDG - Hazard Classifications

Not Applicable

Components

U.S. DOT - Appendix B - Marine Pollutan U.S. DOT - Appendix B - Severe Marine

Pollutants

ETHYL CYCLOPENTANE

Not Listed

Not Listed

IMO-labels:

15. REGULATORY INFORMATION

International Inventories

Components

ETHYL CYCLOPENTANE

Inventory - United States TSCA - Sect. 8(b)

Canada DSL Inventory List -

EU EINECS List -

Korean KECL: **Philippines PICCS:** Not Listed

Not Listed

216-686-1; C7H14

KE-13586 Present

U.S. regulations:

Components

California Proposition 65 Massachusetts Right to New Jersey Right to

Pennsylvania Right to Know

ETHYL CYCLOPENTANE

Not Listed

Know List: [present]

Not Listed

Know List: Not Listed

List: [present]

Florida substance List:

Rhode Island Right to

Illinois - Toxic Air

Connecticut - Hazardous Air

ETHYL CYCLOPENTANE

[present]

Know List:

Contaminants

Pollutants

Not Listed

Components

Components

SARA 313 Emission

CERCLA/SARA - Section NTP:

IARC:

Not Listed

reporting/Toxic Release 302 Extremely Haz of Chemicals

None

None

ETHYL CYCLOPENTANE **SARA 313 Notification:**

Not Listed

Not Listed

The above is your notification as to the SARA 313 listing for this product(s) pursuant

to Section 313 of Title III of the Superfund Ammendments and Reauthorization Act of

1986 and 40 CFR Part 372.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community

Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2499 (in

Washington, DC or Alaska).

State Notification:

The above information is your notice as to the Right-to-Know listings of the stated product(s). Individual states will list chemicals for a variety of reasons including, but not limited to, the compounds toxicity; carcinogenic, tumorigenic and/or reproductive

hazards; and the compounds environmental impact if accidentally released.

16. OTHER INFORMATION

Prepared by: Health & Safety

Catalog Number: 221711

Product name: ETHYL CYCLOPENTANE

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Disclaimer: The information and recommendations contained herein are based upon tests believed to be reliable. However, MP Biomedicals does not guarantee the accuracy or completeness NOR SHALL ANY OF THIS INFORMATION CONSTITUTE A WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE. Adjustment to conform to actual conditions of usage maybe required. MP Biomedicals assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

End of Safety Data Sheet

Cata log Number: 221711

Product name: ETHYL CYCLOPENTANE

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Catalog Number: 219203 Revision date: 25-Apr-2006

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY INFORMATION

Catalog Number: 219203

Product name: ETHYLCYCLOHEXANE

Supplier:

MP Biomedicals, LLC 29525 Fountain Parkway Solon, OH 44139 tel: 440-337-1200

Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components ETHYLCYCLOHEXANE CAS Number 1678-91-7 Weight % 90 - 100%

ACGIH Exposure Limits:

OSHA Exposure Limits:

None

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Flammable

Category of Danger:

Flammable

Principle routes of exposure: Skin

Inhalation: May cause irritation of respiratory tract

Ingestion: May be harmful if swallowed.

Skin contact: May cause allergic skin reaction

Eye contact: Avoid contact with eyes

Statements of hazard Flammable

Statement of Spill or Leak - ANSI Label Eliminate all ignition sources. Absorb and/or contain spill with inert materials (e.g., sand, vermiculite). Then place in appropriate container. For large spills, use water spray to disperse vapors, flush spill area. Prevent runoff from entering waterways or sewers.

4. FIRST AID MEASURES

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

Inhalation: Move to fresh air. Call a physician immediately.

Skin contact: Rinse immediately with plenty of water and seek medical advice

Ingestion: Do not induce vomiting without medical advice.

Eye contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Protection of first-aiders: No information available

Medical conditions aggravated by exposure: None known

Catalog Number: 219203

Product name: ETHYLCYCLOHEXANE

Page 1 of 5

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:

Carbon dioxide (CO2), Dry chemical, Foam, Water may be

ineffective.

Specific hazards:

Burning produces irritant fumes.

Unusual hazards:

None known

Special protective equipment for firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent)

and full protective gear

Water mist may be used to cool closed containers.

Not determined

Specific methods: Flash point:

238 °C (460 °F)

Autoignition temperature:

NFPA rating:

1

NFPA Health: NFPA Flammability:

1

NFPA Reactivity:

0

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Environmental precautions: Methods for cleaning up:

Use personal protective equipment.

Prevent product from entering drains.

Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

Storage:

ROOM TEMPERATURE

Handling:

Use only in area provided with appropriate exhaust

ventilation.

Safe handling advice:

Wear personal protective equipment.

Incompatible products:

Oxidising and spontaneously flammable products

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: Breathing apparatus only if aerosol or dust is formed.

Hand protection: Pvc or other plastic material gloves

Skin and body protection: Usual safety precautions while handling the product will provide adequate protection against

this potential effect.

Eye protection: Safety glasses with side-shields

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor

Physical state: Formula:

Molecular weight: Melti ng point/range:

Boiling point/range: Catalog Number: 219203

Colorless Liquid

C8-H16 112.21

-111 °C (-168 °F) 132 °C (269 °F)

Product name: ETHYLCYCLOHEXANE

Page 2 of 5

MP Biomedicals, LLC

www.mpbio.com

Density:

Vapor pressure: Evaporation rate: Vapor density: Solubility (in water):

Flash point:

Autoignition temperature:

0.792 at 20 °C (water = 1)

26 mm Hg at 38 °C No data available

3.9 (air = 1) Insoluble

Not determined

238 °C (460 °F)

10. STABILITY AND REACTIVITY

Stability:

Polymerization:

Hazardous decomposition products:

Stable under recommended storage conditions.

None under normal processing.

Thermal decomposition can lead to release of irritating

gases and vapours such as carbon oxides.

Materials to avoid:

Forms explosive mixture with air. Incompatible with oxidizers, acids and caustics.

Conditions to avoid:

Exposure to air or moisture over prolonged periods.

11. TOXICOLOGICAL INFORMATION

Product Information

Acute toxicity

Components ETHYLCYCLOHEXANE **RTECS Number:**

Not Available

Selected LD50s and LC50s

Not Determined

Chronic toxicity:

Chronic exposure may cause nausea and vomiting, higher exposure causes

unconsciousness.

Local effects:

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and

vomiting.

Specific effects:

May include moderate to severe erythema (redness) and moderate edema (raised

skin), nausea, vomiting, headache.

Primary irritation:

Carcinogenic effects: Mutagenic effects: Reproductive toxicity: No data is available on the product itself. No data is available on the product itself. No data is available on the product itself.

No data is available on the product itself.

12. ECOLOGICAL INFORMATION

Mobility:

Bioaccumulation: Ecotoxicity effects:

Aquatic toxicity:

No data available No data available

No data available

May cause long-term adverse effects in the aquatic

environment.

Components

U.S. DOT - Appendix B -

Marine Pollutan

U.S. DOT - Appendix B - Severe Marine Pollutants

United Kingdom - The Red

ETHYLCYCLOHEXANE

Not Listed

Not Listed

List: Not Listed

Components

Germany VCI (WGK)

World Health Organization

Ecotoxicity - Fish Species

ETHYLCYCLOHEXANE

Not Listed

(WHO) - Drinking Water

Data

110t Libtou

Not Listed

Not Listed

Components

Ecotoxicity - Freshwater

vater Ecoto

Ecotoxicity - Microtox Data Ecotoxicity - Water Flea

Data

ETHYLCYCLOHEXANE

Algae Data Not Listed

Not Listed

Product name: ETHYLCYCLOHEXANE

Not Listed

Catalog Number: 219203

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Components

EPA - ATSDR Priority List

EPA - HPV Challenge Program Chemical List California - Priority Toxic

ETHYLCYCLOHEXANE

Not Listed

Not Listed

Pollutants Not Listed

Components

California - Priority Toxic Pollutants

California - Priority Toxic Pollutants

ETHYLCYCLOHEXANE

Not Listed

Not Listed

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished

with this material may be hazardous.

Do not re-use empty containers

Contaminated packaging:

14. TRANSPORT INFORMATION

UN/Id No:

Not regulated

DOT:

Proper shipping name:

Not Regulated

Components

U.S. DOT - Appendix A Table 1 - Reportable Quantities

ETHYLCYCLOHEXANE

Not Listed

TDG (Canada):

WHMIS hazard class:

Non-controlled

IMDG/IMO

IMDG - Hazard Classifications

Not Applicable

Components

U.S. DOT - Appendix B - Marine Pollutan U.S. DOT - Appendix B - Severe Marine

Pollutants

ETHYLCYCLOHEXANE

Not Listed

Not Listed

IMO-labels:

15. REGULATORY INFORMATION

International Inventories

Components

ETHYLCYCLOHEXANE

Inventory - United States TSCA - Sect. 8(b)

Canada DSL Inventory List -Canada NDSL Inventory List - Present

Not Listed

Australia (AICS):

Present Present

Catalog Number: 219203

Product name: ETHYLCYCLOHEXANE

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EU EINECS List -Inventory - Japan: Korean KECL:

216-835-0; C8H16 3-2231 KE-13575

U.S. regulations:

Components

California Proposition 65 Massachusetts Right to

Know List:

New Jersey Right to Know List:

Pennsylvania Right to Know

List: [present]

ETHYLCYCLOHEXANE

Not Listed

[present]

Not Listed

Connecticut - Hazardous Air

Components ETHYLCYCLOHEXANE Florida substance List: [present]

Rhode Island Right to **Know List:** Not Listed

Illinois - Toxic Air Contaminants Not Listed

Pollutants Not Listed

Components

SARA 313 Emission reporting/Toxic Release

CERCLA/SARA - Section NTP: 302 Extremely Haz

IARC:

of Chemicals **ETHYLCYCLOHEXANE**

Not Listed

Not Listed

None

None

SARA 313 Notification:

The above is your notification as to the SARA 313 listing for this product(s) pursuant to Section 313 of Title III of the Superfund Ammendments and Reauthorization Act of 1986 and 40 CFR Part 372.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2499 (in Washington, DC or Alaska).

State Notification:

The above information is your notice as to the Right-to-Know listings of the stated product(s). Individual states will list chemicals for a variety of reasons including, but not limited to, the compounds toxicity; carcinogenic, tumorigenic and/or reproductive hazards; and the compounds environmental impact if accidentally released.

16. OTHER INFORMATION

Prepared by: Health & Safety

Disclaimer: The information and recommendations contained herein are based upon tests believed to be reliable. However, MP Biomedicals does not guarantee the accuracy or completeness NOR SHALL ANY OF THIS INFORMATION CONSTITUTE A WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE. Adjustment to conform to actual conditions of usage maybe required. MP Biomedicals assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. **End of Safety Data Sheet**

Catalog Number: 219203

Product name: ETHYLCYCLOHEXANE

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Material Safety Data Sheet

Ethyl 4-(dimethylamino)butanoate

ACC# 13489

Section 1 - Chemical Product and Company Identification

MSDS Name: Ethyl 4-(dimethylamino)butanoate

Catalog Numbers: XBX00237CB, XBX00237DA, XBX00237ZZ

Synonyms:

Company Identification:

Maybridge PLC Trevillett, Tintagel

Cornwall, England. PL34 0HW

For information, call: +44(0)1840770453 For emergencies, call: +44(0)7702924616

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
22041-23-2	Ethyl 4-(dimethylamino)butanoate	80+%	unlisted

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Not available. Appearance: Not available.

Not a vailable.

Target Organs: Respiratory system, gastrointestinal system, eyes, skin.

Potential Health Effects

Eye: Causes eye burns.

Skin: Harmful if absorbed through the skin. Causes skin burns.

Ingestion: Harmful if swallowed. Causes gastrointestinal tract burns.

Inhalation: Harmful if inhaled. Causes chemical burns to the respiratory tract.

Chronic: Not available.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid imme diately.

https://fscimage.fishersci.com/msds/13489.htm (1 of 6) [3/22/2007 9:43:41 PM]

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Do not induce vomiting. Get medical aid immediately.

Thalation: Get medical aid immediately. Remove from exposure and move to fresh air mediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

Extinguishing Media: Use foam, dry chemical, or carbon dioxide.

Flash Point: Not available

Autoignition Temperature: Not available. Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: Not published.

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8. **Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in itable container. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling: Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Use only in a chemical fume hood.

Storage: Store in a cool, dry place. Store in a tightly closed container. Corrosives area.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ethyl 4-(dimethylamino)butanoate	none listed	none listed	none listed
4-(difficulty lamino) odtahoate			

OSHA Vacated PELs: Ethyl 4-(dimethylamino)butanoate: No OSHA Vacated PELs are listed for

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this chemical.

Personal Protective Equipment
Eyes: Wear chemical splash goggles.

kin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if

exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid Appearance: Not available.

Odor: Not available. ph: Not available.

Vapor Pressure: Not available. Vapor Density: Not available. Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: 77 - 79 deg C @14mm Hg Freezing/Melting Point: Not available. Decomposition Temperature: Not available.

Solubility: Not available.

Specific Gravity/Density: Not available.

Molecular Formula: C8H17NO2 olecular Weight: 159.23

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials.

Incompatibilities with Other Materials: Strong oxidizing agents, strong reducing agents,

strong acids, strong bases.

Hazardous Decomposition Products: Carbon monoxide, oxides of nitrogen, carbon dioxide.

Hazardous Polymerization: Has not been reported

Section 11 - Toxicological Information

RTECS#:

CAS# 22041-23-2: ES9600000

LD50/LC50: Not available.

rcinogenicity:

CAS# 22041-23-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No data available.

https://fs.cimage.fishersci.com/msds/13489.htm (3 of 6) [3/22/2007 9:43:41 PM]

Teratogenicity: No data available.

Reproductive Effects: No data available.

Mutagenicity: No data available. aurotoxicity: No data available.

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.

Environmental: No information available.

Physical: No information available. **Other:** Do not empty into drains.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed. RCRA U-Series: None listed.

Section 14 - Transport Information

	USDOT	Canada TDG
Shipping Name:	AMINES, LIQUID, CORROSIVE,	AMINES, LIQUID, CORROSIVE,
	N.O.S.*	N.O.S.*
Hazard Class:	8	8
UN Number:	UN2735	UN2735
Packing Group:	Ш	Ш

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 22041-23-2 is not listed on the TSCA inventory. It is for research and development use only.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

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Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

Section 313 No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 22041-23-2 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

Tropean Labeling in Accordance with EC Directives azard Symbols:

C

Risk Phrases:

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R 34 Causes burns.

Safety Phrases:

S 23 Do not inhale gas/fumes/vapour/spray.

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 22041-23-2: No information available.

Canada - DSL/NDSL

None of the chemicals in this product are listed on the DSL or NDSL list.

Canada - WHMIS

not available.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Inadian Ingredient Disclosure List

Section 16 - Additional Information

MSDS Creation Date: 2/10/2006 Revision #0 Date: Original.

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assure no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profit or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

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Material Safety Data Sheet

Ethyl Benzene

ACC# 08780

Section 1 - Chemical Product and Company Identification

MSDS Name: Ethyl Benzene

Catalog Numbers: 02751 1, 02751-1, 027511

Synonyms: Ethylbenzol; Phenylethane

Company Identification:

Fisher Scientific 1 Reagent Lane Fair Lawn, NJ 07410

For information, call: 201-796-7100 Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS# Chemical Name	Percent	EINECS/ELINCS
100-41-4 Ethylbenzene	100	202-849-4

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid. Flash Point: 21 deg C.

Warning! Causes eye irritation. **Flammable liquid and vapor.** Causes skin irritation. May be absorbed through intact skin. Aspiration hazard if swallowed. Can enter lungs and cause damage. Causes digestive and respiratory tract irritation. May cause central nervous system depression. **Target Organs:** Central nervous system.

Potential Health Effects

Eye: Causes moderate eye irritation. Vapors may cause eye irritation.

Skin: Causes skin irritation. Prolonged and/or repeated contact may cause irritation and/or dermatitis. May be absorbed through the skin. Contact with the liquid may cause erythema

(redness), exfoliation and vesiculation (blistering).

pression: May cause irritation of the digestive tract. May cause central nervous system pression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal.

Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tractirritation. Vapors may cause dizziness or suffocation.

ironic: Chronic inhalation may cause effects similar to those of acute inhalation.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing

contaminated clothing and shoes.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately. **Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: Containers can build up pressure if exposed to heat and/or fire. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or a ruivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can avel to a source of ignition and flash back. Use water spray to keep fire-exposed containers cool. Flammable liquid and vapor. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Containers may explode when heated.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. For large fires, use water spray, fog or alcohol-resistant foam. Contact professional fire-fighters immediately. Cool containers with flooding quantities of water until well after fire is out.

Flash Point: 21 deg C (69.80 deg F)

Autoignition Temperature: 810 deg F (432.22 deg C)

Explosion Limits, Lower: 0.8

Upper: 6.7

NFPA Rating: (estimated) Health: 3; Flammability: 4; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8. **Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor but may not prevent ignition in closed spaces.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use with adequate ventilation. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty ntainers retain product residue, (liquid and/or vapor), and can be dangerous. Keep contains tightly closed. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks of open flames.

Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry,

well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ethylbenzene	100 ppm TWA; 125 ppm STEL	100 ppm TWA; 435 mg/m3 TWA 800 ppm IDLH	100 ppm TWA; 435 mg/m3 TWA

OSHA Vacated PELs: Ethylbenzene: 100 ppm TWA; 435 mg/m3 TWA Prsonal Protective Equipment

-/es: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves and clothing to prevent skin exposure.

Clothing: Wear appropriate protective gloves and clothing to prevent skin exposure. **Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: clear, colorless

Odor: aromatic odor pH: Not available.

Vapor Pressure: 7.1 mm Hg @ 20 C

Vapor Density: 3.7

Evaporation Rate:<1 (butyl acetate=1)

Viscosity: 0.63 mPa s 20 C Boiling Point: 277 deg F

Freezing/Melting Point:-139 deg F

Decomposition Temperature:Not available.

lubility: Insoluble.

Specific Gravity/Density:0.9 Molecular Formula:C8H10 Molecular Weight:106.07

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. **Conditions to Avoid:** Incompatible materials, ignition sources, excess heat.

Incompatibilities with Other Materials: Oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 100-41-4: DA0700000

LD50/LC50:

CAS# 100-41-4:

Draize test, rabbit, eye: 500 mg Severe; Inhalation, mouse: LC50 = 35500 mg/m3/2H;

Inhalation, rat: LC50 = 55000 mg/m3/2H;

Oral, rat: LD50 = 3500 mg/kg; Oral, rat: LD50 = 3500 mg/kg; Skin, rabbit: LD50 = 17800 uL/kg;

al, rat: LD50 = 5.46 carcinogenicity:

CAS# 100-41-4:

ACGIH: A3 - Confirmed animal carcinogen with unknown relevance to humans

• California: carcinogen, initial date 6/11/04

• NTP: Not listed.

• IARC: Group 2B carcinogen

Epidemiology: No information found **Teratogenicity:** No information found

Reproductive Effects: No information found

Mutagenicity: Mutation in mammalian somatic cells(Rodent, mouse) Lymphocyte = 80 mg/L.

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Rainbow trout: 14.0 mg/L; 96 Hr.; StaticFish: Fathead Minnow: 12.1 mg/L; 96 Hr.; Flow-throughFish: Bluegill/Sunfish: LC50 =150.0 mg/L; 96 Hr.; Flow-throughWater flea FC50 =2.1 mg/L; 48 Hr.; StaticBacteria: EC50 =9.8 mg/L; 30 minutes; Micotox TestWater flea 50 =75.0 mg/L; 48 minutes; Static, pH6.7-8.1, 72.0 mg/L CaCO3 Shrimp (mysidoposis bahia), LC50=87.6 mg/L/96hr. Sheepshead minnow LC50=275 mg/L/96hr. Fathead minnow LC50=42.3 mg/L/96hr in hard water &48.5 mg/L/96hr in softwater.

Environmental: Experimental data on the bioconcentration of ethylbenzene include a log BCF of

1.9 in goldfish and the log BCF of 0.67 for clams exposed to the water-soluble fraction of cruoil. Using its octanol/water partition coefficient (log Kow= 3.15) and using a recommended regression equation, one can calculate a log BCF in fish of 2.16 indicating that ethylbenzene ould not significantly bioconcentrate in aquatic organisms. Ethylbenzene has a moderate adsorption for soil. The measured Koc for silt loam was 164

Physical: The predominant photochemical reaction of ethylbenzene in the atmosphere is with hydroxyl radicals; the tropospheric half-life for this reaction is 5.5 and 24 hr in the summer a winter, actively. Degradation is somewhat faster under photochemical smog situations. Photooxidation products which have been identified include ethylphenol, benzaldehyde, acetophenone and m- and p-ethylnitrobenzene. Ethylbenzene is resistant to hydrolysis. Ethylbenzene does not significantly absorb light above 290 nm in methanol solution.

Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Par 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed. RCRA U-Series: None listed.

Section 14 - Transport Information

the time a management of the time and a management state, where	US DOT	Canada TDG
Shipping Name:	ETHYLBENZENE	ETHYL BENZENE
Hazard Class:	3	3
UN Number:	UN1175	UN1175
Packing Group:	II	II
Additional Info:		FLASHPOINT 15C

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 100-41-4 is listed on the TSCA inventory.

Health & Safety Reporting List

CAS# 100-41-4: Effective 6/19/87, Sunset 6/19/97

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

ection 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 100-41-4: 1000 lb final RQ; 454 kg final RQ

CARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 100-41-4: immediate, delayed, fire.

Section 313

This material contains Ethylbenzene (CAS# 100-41-4, 100%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 100-41-4 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

CAS# 100-41-4 is listed as a Hazardous Substance under the CWA. CAS# 100-41-4 is listed as a Priority Pollutant under the Clean Water
Act. CAS# 100-41-4 is listed as a Toxic Pollut under the Clean Water Act.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 100-41-4 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:

WARNING: This product contains Ethylbenzene, a chemical known to the state of California to use cancer.

ilifornia No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives Hazard Symbols:

XN F

Risk Phrases:

R 11 Highly flammable.

R 20 Harmful by inhalation.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.

S 24/25 Avoid contact with skin and eyes.

S 29 Do not empty into drains.

WGK (Water Danger/Protection)

CAS# 100-41-4: 1

Canada - DSL/NDSL

CAS# 100-41-4 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 100-41-4 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 4/28/1999 **Revision #4 Date:** 10/03/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assemble in the information is use. Users should make their own investigations to determine the suitability of the information is their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost proof or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised the possibility of such damages.

SIGMA-ALDRICH

Material Safety Data Sheet

Version 3.0 Revision Date 03/22/2007 Print Date 08/16/2007

1. PRODUCT AND COMPANY IDENTIFICATION

Product name

Ethyl acetate

Product Number

58958

Brand

Fluka

Company

: Sigma-Aldrich

3050 Spruce Street

SAINT LOUIS MO 63103

USA

Telephone

: +1 800-325-5832

Fax

: +1 800-325-5052

Emergency Phone #

: (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula

: C4H8O2

CAS-No.	EC-No.	Concentration [%]		
Ethyl acetate				
141-78-6	205-500-4	607-022-00-5	-	

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Flammable Liquid

Delayed target organ effects

Moderate eye irritant

Target Organs

Blood, Kidney, Liver, Central nervous system

HMIS Classification

Health Hazard: 2

Chronic Health Hazard: *

Flammability: 3
Physical hazards: 0

NFPA Rating

Health Hazard: 2

Fire: 3

Reactivity Hazard: 1

Potential Health Effects

Inhalation

May be harmful if inhaled. May cause respiratory tract irritation. Vapours may

cause drowsiness and dizziness.

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Skin

May be harmful if absorbed through skin. May cause skin irritation. Repeated

exposure may cause skin dryness or cracking.

Eves Ingestion Causes eye irritation.

May be harmful if swallowed.

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point

-3.0 °C (26.6 °F) - closed cup

Ignition temperature

427 °C (801 °F)

Suitable extinguishing media

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water. Carbon dioxide (CO2)

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods for cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

Handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in cool place.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
Ethyl acetate	141-78-6	TWA	400 ppm 1,440 mg/m3	1996-05-18	US. American Conference of Governmental and Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004:Committees on Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs)
Remarks	Refers to Ap 1996 Adopt		Carcinogens.		
		TWA	400 ppm 1,400 mg/m3	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A
		TWA	400 ppm 1,400 mg/m3	1993-06-30	US. Department of Labor - Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PEL) 29 CFR 1910.1000 Air Contaminants.

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves.

Eye protection

Safety glasses

Skin and body protection

impervious clothing, Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form clear, liquid
Colour colourless

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Safety data

рΗ

no data available

Melting point

-84.0 °C (-119.2 °F)

Boiling point

76.5 - 77.5 °C (169.7 - 171.5 °F)

Flash point

-3.0 °C (26.6 °F) - closed cup

Ignition temperature

427 °C (801 °F)

Lower explosion limit

2.2 %(V)

Upper explosion limit

11.5 %(V)

Vapour pressure

97.3 hPa (73.0 mmHg) at 20.0 °C (68.0 °F)

Density

0.90 g/cm3

Water solubility

soluble

Water Solublity

log Pow: 0.73

Partition coefficient (n-octanol/water)

10. STABILITY AND REACTIVITY

Storage stability

Stable under recommended storage conditions.

Conditions to avoid

Heat, flames and sparks.

Materials to avoid

Strong oxidizing agents

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions.

Carbon oxides

Hazardous reactions

Vapours may form explosive mixture with air.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 5,620 mg/kg

LC50 Inhalation - mouse - 2 h - 45,000 mg/m3

LD50 Dermal - rabbit - > 180,000 mg/kg

Irritation and corrosion

Skin: no data available

Sensitization

Remarks: no data available

Chronic exposure

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

Signs and Symptoms of Exposure

Central nervous system depression, Drowsiness, narcosis, anemia

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12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Biodegradability

Remarks: no data available

Ecotoxicity effects

Toxicity to fish

LC50 - Oncorhynchus mykiss (rainbow trout) - 350.00 - 600.00 mg/l - 96 h

LC50 - Pimephales promelas (fathead minnow) - 220.00 - 250.00 mg/l - 96 h

Toxicity to daphnia and other aquatic

EC50 - Daphnia magna (Water flea) - 2,300.00 - 3,090.00 mg/l - 24 h

LC50 - Daphnia magna (Water flea) - 560 mg/l - 48 h

Toxicity to algae

invertebrates.

EC50 - No information available. - 4,300.00 mg/l - 24 h

EC50 - SELENASTRUM - 1,800.00 - 3,200.00 mg/l - 72 h

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS

Product

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN-No.: 1173

Class: 3

Packing group: II

Proper shipping name: Ethyl acetate

IMDG

UN-No.: 1173

Class: 3

Packing group: II

EMS-No: F-E, S-D

Proper shipping name: ETHYL ACETATE

Marine pollutant: No

IATA

UN-No.: 1173

Class: 3

Packing group: II

Proper shipping name: Ethyl acetate

15. REGULATORY INFORMATION

OSHA Hazards

Flammable Liquid, Delayed target organ effects, Moderate eye irritant

TSCA Status

On TSCA Inventory

DSL Status

All components of this product are on the Canadian DSL list.

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SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

CAS-No. Revision Date 141-78-6 1989-12-01

Pennsylvania Right To Know Components

CAS-No. Revision Date 1989-12-01

Ethyl acetate 141-78-6 1989-12-01

New Jersey Right To Know Components

Ethyl acetate CAS-No. Revision Date 141-78-6 1989-12-01

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further information

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Material Safety Data Sheet

ULTRA Scientific · 250 Smith Street · North Kingstown, RI, USA 02852 · 401-294-9400

Last Updated: 11/14/2006 Product # RCC-181

Section I

Product Identification

Name: Ethyl Alcohol

Matrix: neat compound

Section II

Composition / Information on Ingredients

Component

CAS#

% by Wt.

LD50

OSHA PEL

ACGIH TLV

RTECS#

Codes

ethyl alcohol

000064-17-5

100

21000 mg/kg oral rat

N/A

1884 mg/m3

KQ6300000

Codes: A-OSHA regulated carcinogen; B-IARC Group 1 carcinogen; C-IARC Group 2A carcinogen; D-IARC Group 2B carcinogen; E-NTP Group 1 carcinogen; F-NTP Group 2 carcinogen; G-SARA Title III compound; H-California Proposition 65 compound.

Section III

Hazards Identification

Contains carcinogen(s) or cancer suspect agent(s)

All chemicals should be considered hazardous - direct physical contact should be avoided.

Section IV

First Aid Measures

Inhalation:

If inhaled, remove to fresh air. Give oxygen, if necessary. Contact a physician.

Skin Contact:

In case of skin contact, flush with copious amounts of water. Remove

contaminated clothing. Contact a physician.

Eye Contact:

In case of eye contact, flush with copious amounts of water, lifting eyelids

occasionally. Contact a physician.

Ingestion:

If ingested, contact poison center immediately for recommended procedure.

Contact a physician.

Section V

Fire Fighting Measures

Fire and Explosion Hazard Data for Compound

Fire Hazard: N/A

Extinguishing Media: Carbon dioxide, dry chemical powder, or water spray

Section VI

Accidental Release Measures

Ventilate area of the leak or spill. Wear appropriate personal protective equipment as specified in Section VIII. A leaking bottle, vial, or ampule may be placed in a plastic bag, and normal disposal procedures followed. Take up spilled material with sand or other non-combustible absorbant material, and place in an appropriate container for later disposal. Flush spill area with water.

Section VII

Handling and Storage

May be stored at room temperature

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Keep in a tightly closed container, and store in a corrosion proof area.

This product should only be used by persons trained in the safe handling of hazardous chemicals.

Section VIII Exposure Controls / Personal Protection

Ensure that there is adequate ventilation to prevent airborne levels from exceeding recommended exposure limits (see Section II). Use appropriate MSHA/NIOSH approved safety equipment. Wear chemical goggles, face shield, gloves, and chemical resistant clothing, such as a laboratory coat and/or a rubber apron, to prevent contact with eyes, skin, and clothing.

Section IX

Physical and Chemical Properties

Physical Data for Compound

Melting Pt.: N/A

Boiling Pt.: N/A

Density: N/A

Vapor Pressure: N/A

Vapor Density: N/A

Water Solubility: N/A

Appearance: N/A

Odor: N/A

Flash Point: N/A

Auto-Ignition Temperature: N/A

LEL: N/A

UEL: N/A

Section X

Stability and Reactivity

Reactivity Data for Compound

Stability: stable

Incompatibilities: N/A

Hazardous Decomposition Products: N/A Hazardous Effects of Polymerization: no

Section XI

Toxicological Information

See Section II for specific toxicological information for the ingredients of this product.

Section XII

Ecological Information

No information is available.

Section XIII Disposal Considerations

Recycle, if possible. Any material which cannot be saved for recovery or recycling should be disposed of at an appropriate and approved waste disposal facility. Processing, use, and/or contamination of this product may Change waste management requirements. Observe all applicable federal, state, and local environmental regulations concerning disposal.

Section XIV

Transport Information

Shipment Type: Dangerous Goods in Excepted Quantity (US DOT Small Quantity Exemption)

UN Number: UN1170

Shipping Class: 3

Packing Group: ||

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Regulatory Information

No information is available.

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Section XVI Other Information

The above information is believed to be correct, but does not purport to be all-inclusive. This data should be used only as a guide in handling this material. ULTRA Scientific, Inc., shall not be held liable for any damage resulting from handling or from contact with the above product.

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REVISION DATE: 01-30-2007

SUPERSEDES:

None

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

COMPANY INFORMATION
Specialty Construction Brands, Inc.
(formerly TEC Specialty Products, Inc.
An H.B. Fuller Company)
315 South Hicks Road
Palatine, IL 60067
Phone: 847-358-9500

Medical Emergency Phone Number (24 Hours): 1-888-853-1758 Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

PRODUCT INFORMATION

PRODUCT IDENTIFIER:

825349PM

PRODUCT NUMBER:

TA0440A MTO TINT

PRODUCT DESCRIPTION:

Epoxy resin

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Unlisted ingredients are not 'hazardous' per the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200) and/or are not found on the Canadian Workplace Hazardous Materials Information System ingredient disclosure list. See Section 8 for any additional exposure limit guidelines.

CAS#	PERCENT	OSHA PEL
25085-99-8	50 - 70	Not established
68609-97-2	5 - 10	Not established
65997-17-3	5 - 10	TWA 6 MG/M3
471-34-1	1 - 5	TWA (Respirable dust) 5 MG/M3 TWA (Total dust) 15 MG/M3
13463-67-7	1 - 5	TWA (Total dust) 10 MG/M3
14808-60-7	0.1 - 1	TWA (Respirable dust) 0.1 MG/M3
1333-86-4	0.1 - 1	TWA 3.5 MG/M3
1317-80-2	0.1 - 1	TWA (Total dust) 10 MG/M3
	25085-99-8 68609-97-2 65997-17-3 471-34-1 13463-67-7 14808-60-7	25085-99-8 50 - 70 68609-97-2 5 - 10 65997-17-3 5 - 10 471-34-1 1 - 5 13463-67-7 1 - 5 14808-60-7 0.1 - 1

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Moderate eye irritant.

Causes skin irritation. May cause allergic skin reaction.

Harmful if swallowed.

Cancer hazard.

HMIS RATING: HEALTH -- 2 FLAMMABILITY -- 1 REACTIVITY -- 0

See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

POTENTIAL HEALTH EFFECTS BY ROUTE OF ENTRY

EYE: Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.

SKIN: Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage. May cause sensitization.

INHALATION: Can cause minor respiratory irritation. Inhalation of dusts produced during cutting, grinding or sanding of this product may cause irritation of the respiratory tract.

Overexposure to crystalline silica may cause silicosis. This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

INGESTION: Ingestion is not an anticipated route of exposure. Harmful if swallowed. Irritating to mouth, throat, and stomach.

LONG-TERM (CHRONIC) HEALTH EFFECTS

TARGET ORGAN(S): Skin Lungs

REGULATED CARCINOGEN STATUS:

Unless noted below, this product does not contain regulated levels of NTP, IARC, ACGIH, or OSHA listed carcinogens.

Titanium dioxide

Crystalline silica

Carbon black

Titanium dioxide (Rutile)

EXISTING HEALTH CONDITIONS AFFECTED BY EXPOSURE: Skin disease including eczema and sensitization; Lung disease

SECTION 4: FIRST AID MEASURES

IF IN EYES: Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.

IF ON SKIN: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

IF VAPORS INHALED: Remove to fresh air. Call a physician if symptoms persist.

IF SWALLOWED: Do not induce vomiting. Seek medical attention immediately. Drink two glasses of water or milk to dilute. Do not give anything by mouth to an unconscious person. Induced vomiting may lead to aspiration the material into the lungs potentially causing chemical pneumonitis that may be fatal.

SECTION 5: FIRE FIGHTING MEASURES

SPECIAL FIRE FIGHTING INSTRUCTIONS:

FLASH POINT: Not applicable **AUTOIGNITION TEMPERATURE:** Not established LOWER EXPLOSIVE LIMIT (% in air): Not established

UPPER EXPLOSIVE LIMIT (% in air): Not established

EXTINGUISHING MEDIA: Use water spray, foam, dry chemical or carbon dioxide.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Material will burn in a fire.

Persons exposed to products of combustion should wear selfcontained breathing apparatus and full protective equipment.

HAZARDOUS COMBUSTION PRODUCTS: Carbon dioxide, Carbon monoxide Silicon dioxide

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPECIAL PROTECTION: Exposure to the spilled material may be irritating or harmful. Follow

personal protective equipment recommendations found in Section 8 of this MSDS. Additional precautions may be necessary based on special

circumstances created by the spill including; the material spilled, the quantity

of the spill, the area in which the spill occurred.

Dike if necessary, contain spill with inert absorbent and transfer to containers CLEAN-UP:

for disposal. Keep spilled product out of sewers, watersheds, or water

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 7: HANDLING AND STORAGE

Harmful or irritating material. Avoid contacting and avoid breathing the material. Use only in Handling:

a well ventilated area.

Storage: Store in a cool, dry place.

Consult the Technical Data Sheet for specific storage instructions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EYE PROTECTION: Wear safety glasses with side shields when handling this product.

> Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash

station available.

SKIN PROTECTION: Avoid skin contact by wearing chemically resistant gloves and long

sleeved shirt. An apron may be appropriate if splashing can occur.

GLOVES: Nitrile

RESPIRATORY PROTECTION: Respiratory protection may be required to avoid overexposure when

> handling this product. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. NIOSH approved air purifying respirator with dust/mist filter if product is sprayed. Respirators should be selected by and used following requirements

found in OSHA's respirator standard (29 CFR 1910.134).

VENTILATION: Use local exhaust ventilation or other engineering controls to

minimize exposures.

EXPO	CT	ID	D T	TA	437	re.
EXPU	21	JK	r. 1	ΑIN	/1 f 1	

Chemical Name	ACGIH EXPOSURE LIMITS	AIHA WEEL		
Epoxy resin	Not established	Not established		
Epoxy resin	Not established	Not established		
Glass oxide, bubbles	TWA 10 MG/M3	Not established		
Calcium carbonate	TWA 10 MG/M3	Not established		
Titanium dioxide	TWA 10 MG/M3	Not established		
Crystalline silica	TWA (Respirable dust) 0.05 MG/M3	Not established		
Carbon black	TWA 3.5 MG/M3	Not established		
Titanium dioxide (Rutile)	TWA (Total dust) 10 MG/M3	Not established		

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:

COLOR:

ODOR:

ODOR THRESHOLD: WEIGHT PER GALLON (lbs.):

SPECIFIC GRAVITY: SOLIDS (% by weight):

pH:

BOILING POINT (deg. C): FREEZING/MELTING POINT (deg. C):

VAPOR PRESSURE (mm Hg): **VAPOR DENSITY:**

EVAPORATION RATE: OCTANOL/WATER COEFFICIENT: Liquid

White Aromatic Mild

Not established 9.00

1.08 100.0

Not established

Not established Not established

Not established

Not established Not established Not established

SECTION 10: STABILITY AND REACTIVITY

STABILITY:

Stable under normal conditions.

CHEMICAL INCOMPATIBILITY: HAZARDOUS POLYMERIZATION:

Not established Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide Silicon dioxide

SECTION 11: TOXICOLOGICAL INFORMATION

CHEMICAL NAME	LD50/LC50
Epoxy resin	Not established
Epoxy resin	Not established
Glass oxide, bubbles	Not established
Calcium carbonate	Oral LD50 Rat = 6450 mg/kg
Titanium dioxide	Not established
Crystalline silica	Not established
Carbon black	Oral LD50 Rat >15400 mg/kg Dermal LD50 Rabbit > 3 g/kg
Titanium dioxide (Rutile)	Not established

TOXICOLOGY SUMMARY:

No additional health information available.

SECTION 12: ECOLOGICAL INFORMATION

OVERVIEW: No ecological information available

SECTION 13: DISPOSAL CONSIDERATIONS

To the best of our knowledge, this product does not meet the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. Disposal via incineration at an approved facility is recommended. Consult state, local or provincial authorities for more restrictive requirements.

SECTION 14: TRANSPORTATION INFORMATION

Consult Bill of Lading for transportation information.

DOT: NOT REGULATED IATA: NOT REGULATED

SECTION 15: REGULATORY INFORMATION

INVENTORY STATUS

U.S. EPA TSCA:

This product is in compliance with the Toxic Substances Control Act's

Inventory requirements.

If you need more information about the inventory status of this product call 651-236-5858.

This product may contain chemical substances that are regulated for export by various government agencies (such as the Environmental Protection Agency, the Bureau of Industry and Security, or the Drug Enforcement Administration, among others). Before exporting this product from the USA or Canada, we recommend you contact us at 651-236-5858 (USA) or 450-655-1306 x227 (Canada) to request an export review.

FEDERAL REPORTING

EPA SARA Title III Section 313

Unless listed below, this product does not contain toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372. EPA has advised that when a percentage range is listed the midpoint may be used to fulfill reporting obligations.

Chemical Name

CAS#

%

WHMIS STATUS: Unless listed below, this product is not controlled under the Canadian Workplace Hazardous Materials Information System.

D2B D2A

STATE REPORTING

Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986:

Unless listed below, this product does not contain known levels of any chemical known to the State of California to

cause cancer or reproductive harm.

Chemical Name/List	CAS	Percent
Quartz (Carcinogen)	14808-60-7	0.1 - 1
Carbon black (Carcinogen)	1333-86-4	0.1 - 1
Nickel compounds (Carcinogen)	12607-70-4	0.001 - 0.01
Benzene, ethyl- (Carcinogen)	100-41-4	0.001 - 0.01
Epichlorohydrin (Carcinogen)	106-89-8	< 10 ppm
Lead compounds (Carcinogen)		< 10 ppm
Cadmium compounds (Carcinogen)		< 10 ppm
Benzene (Carcinogen)	71-43-2	< 10 ppm
Benzene (Developmental toxin)	71-43-2	< 10 ppm
Epichlorohydrin (Male reproductive toxin)	106-89-8	< 10 ppm
Benzene (Male reproductive toxin)	71-43-2	< 10 ppm

SECTION 16: ADDITIONAL INFORMATION

This Material Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

Prepared by: The Global Regulatory Department

Phone: 651-236-5842

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to Specialty Construction Brands, Inc. from its suppliers, and because Specialty Construction Brands, Inc. has no control over the conditions of handling and use, Specialty Construction Brands, Inc. makes no warranty, expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and Specialty Construction Brands, Inc. assumes no responsibility for use or reliance thereon. It is the responsibility of the user of Specialty Construction Brands, Inc. products to comply with all applicable federal, state and local laws and regulations.



PRODUCT/MATERIAL:

ECO 53BC

EMERGENCY PHONE NO.

MANUFACUTURER:

EMULSIONS CONTROL, INC.

SPILL: OFFICE: 800-633-8253 619-656-8899

925 Hale Place, Suite A-7 Chula Vista, CA 91914

SECTION I - MATERIAL IDENTIFICATION

TRADE NAME:

ECO 53BC

PRODUCT CODE NO:

ECO 53BC

GENERIC NAME:

Oil based demulsifier

MSDS CODE NO:

ECO 53BC

CHEMICAL NAME: Solvent blend of surface

Not registered

active organic compounds

CAS REGISTRY NO:

SYNONYMS:

Emulsion breaker

NOISH REGISTRY NO:

Not registered

CHEMICAL AMILY:

Hydrocarbon solvents, organic acids and resins **CHEMICAL FORMULA:**

Mixture/ liquid/

organic compounds

SECTION II - HAZARD IDENTIFICATION

HEALTH/PHYSICAL HAZARDS: This material is a flammable liquid, a severe eye and skin irritant. Material similar to a major component have been shown to cause skin cancer in laboratory animals.

HAZARD LISTING: Flammable Liquid, n.o.s. (Isopropanol)

OTHER:

Warning Label "Flammable Liquid"

Tanks, pipes and containers retain material or material residue. Failure to exercise caution during cleaning. maintenance, repair or sampling operations can be hazardous and lead to injury. Read sections V. VIII & X.

SECTION III - HAZARDOUS INGREDIENTS & RECOMMENDED EXPOSURE LIMITS

HAZARDOUS INGREDIENTS:

RECOMMENDED EXPOSURE LIMITS

LIMIT TYPE

AMOUNT AGENCY*

1) Alcohols, ketones, esters, aliphatic

and aromatic solvents

8-hr TWA

400 ppm

2) Surface active organic compounds (Proprietary)

None established

(i) Recommended by manufacturer

A = ACGIH; C = CAL/OSHA; M = MSHA; O= OSHA; X = OTHER

PRODUCT/MATERIAL: ECO 53BC

SECTION VII - CHEMICAL REACTIVITY INFORMATION

STABILITY: Stable under normal conditions of storage and handling.

REACTIVITY: Reacts with strong oxidizing agents and alkaline materials.

INCOMPATIBILITY: Strong oxidizing agents, alkaline materials

HAZARDOUS REACTION/DECOMPOSITION PRODUCTS: Carbon dioxide and carbon monoxide, oxides of

sulfur and nitrogen.

SECTION VIII - FIRE & EXPLOSION HAZARD INFORMATION

NFPA RATING:

HEALTH: 2

FLAMMABILITY: 3

REACTIVITY: 0

FLASH POINT (METHOND): <70° F (PMCC) FLAMMABLE LIMITS (% BY VOLUME/AIR):

FIRE POINT/AUTOIGNITION TEMP: No data

LOWER 1 UPPER 4%

FIRE/EXPLOSION HAZARDS: This material is a moderate fire and explosion hazard and may be ignited by an ignition source above its flash point. Vapors may travel to ignition source and flash back. Containers may explode in fire. A vapor explosion hazard indoors, outdoors or in sewers. <u>Empty containers</u> retain material residue and may generate vapors which can ignite and explode.

CUMBUSTION PRODUCT:

Carbon dioxide, carbon monoxide and water vapor. Oxides of sulfur and

nitrogen.

EXTINGUISHING MEDIA:

Carbon dioxide and dry chemical. Do not use water.

FIRE FIGHTING PROCEDURES: Fire fighters should wear full protective clothing and equipment, including self-contained breathing apparatus when fighting fires in enclosed spaces. Use water spray to cool containers, to dilute and disperse vapors, protect personnel, and to flush unignited spills from fire.

SECTION IX - PERSONAL PROTECTION & ENGINEERING CONTROLS

EYE & FACIAL PROTECTION: Chemical goggles are recommended to prevent eye contact. In situations where splashing may occur, splash goggles and a face shield should be worn.

SKIN PROTECTION:

Impervious protective glove, long-sleeve clothing and a chemical apron are

recommended to prevent skin contact (Butyl rubber or polyethylene are

recommended!). Wear protective boots in situations where splashing may occur.

RESPIRATORY PROTECTION: In situations where vapor concentrations exceed the recommended exposure limits, a NIOSH-approved organic vapor cartridge respirator should be worn.

VENTILATION: Explosion-proof general mechanical ventilation or local exhaust is recommended to maintain vapor concentrations below the recommended exposure limits

THER:

An eye wash and source of running water should be available to flush or wash the eyes and skin.

PRODUCT/MATERIAL: ECO 53BC

SECTION X - HANDLING DURING ROUTINE & NON-ROUTINE OPERATIONS

STORAGE: Store in closed containers in a cool, dry, well-ventilated area away from sources of heat and ignition and strong oxidizing agents. Containers should be electrically bonded and grounded when transferring material.

HANDLING: Use in a well-ventilated area and recommended protective equipment and clothing. Use explosion-proof tools and equipment. Avoid breathing vapors or mists and prolonged or repeated skin contact. Avoid heating above 70° F. Label all unattended containers.

MISUSE OF EMPTY CONTAINERS CAN BE HAZARDOUS. COMPLETELY DRAIN AND HAVE COMMERCIALLY CLEANED BEFORE ANY REUSE. KEEP CONTAINERS CLOSED AND DO NOT USE TO STORE OR MIX ANY OTHER MATERIALS BEFORE THEY HAVE BEEN COMMERCIALLY CLEANED. DO NOT CUT, WELD, DRILL, OR SUBJECT EMPTY CONTAINERS TO HEAT OR FLAMES. VAPORS MAY IGNITE AND EXPLODE.

SECTION XI - SPILL, LEAK & DISPOSAL PROCEDURES

SPILL OR LEAK PROCEDURES: Evacuate area for large spills. Remove all ignition sources and provide explosion-proof ventilation. Wear recommended protective clothing and equipment. Do not allow spills to enter sewers, streams or surface waters. Dike and contain spill. Use inert absorbent to reduce fumes and to pick up. Collect for later disposal.

DISPOSAL PROCEDURES:

DISPOSE OF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS. Empty containers should be commercially cleaned and

reconditioned before reuse.

SECTION XII - PHYSICAL DESCRIPTION & PROPERTIES

DESCRIPTION: A brown or red colored liquid with a slightly pungent odor.

MELTING POINT:

N/A

SOLUBILITY (WATER):

Negligible

BOILING POING/RANGE:

133-760° F

pH:

N/A

OVERPOINT:

N/A

SPECIFIC GRAVITY:

0.90-0.93

VAPOR PRESSURE:

65-75 mm of Hg @ 20° C

API GRAVITY:

N/A

% VOLATILE BY VOLUME:

30-50%

2.5-4 (N-Butyl Acetate=1)

VISCOSITY: POUR POINT: N/A N/A

VAPOR DENSITY: EVAPORATION RATE: Heavier than air

OTHER:

None

MSDS CODE NO:

ECO 53BC

NEW/REVISION DATE:

February 13, 2006

PREPARED BY:

Sam Delchad, Ph.D.

DATE:

2-13-06

PRODUCT/MATERIAL: ECO 53BC

SECTION IV - HEALTH HAZARD INFORMATION

GENERAL:

This material is a moderate eye and skin irritant.

OCULAR/EYE:

This material is a moderate eye irritant. Contact with the liquid may cause burning,

redness, swelling, eye burns and eye damage.

DERMAL/SKIN:

This material is a skin irritant. Prolonged or repeated contact may cause burning,

redness, dermatitis, blistering and skin damage.

INHALATION/BREATHING: Exposure to mists or to excessive concentrations of vapors generated when this material is heated may cause irritation of nose, throat and respiratory tract and signs of central nervous system depression; i.e., headache, nausea, drowsiness and dizziness.

INGESTION/SWALLNG: Accidentally swallowing this material may cause irritation and burning of the mouth, throat, esophagus and gastrointestinal (GI) tract.

CHRONIC/OTHER:

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Pre-existing skin, liver, kidney & respiratory

disorders.

SECTION V - SEPCIAL HAZARDS & PRECAUTIONS

HAZAROUS DURING HON-ROUTINE OPERATIONS: Tank, pipes and containers contain material or material residue and may contain toxic, irritating, flammable or explosive vapors of high concentrations and pressures. Exposure to these vapors can cause serious physical harm or injury.

SPECIAL PRECAUTIONS & COMMENTS: Enclosed or head spaces in material tanks, pipes or containers may contain hazardous concentrations of fumes or vapors. Exercise caution and wear recommended protective equipment and clothing when opening valves or tank and container lids, entering empty tanks or during any operations such as cleaning, repair, maintenance or sampling where there is a potential for exposure to these fumes or vapors

SECTION VI - EMERGENCY & FIRST AID PROCEDURES

ATTENTION: IF VICTIM IS NOT BREATHING OR IF BREATHING DIFFICULTIES DEVELOP, ARTIFICIAL RESPIRATION OR OXYGEN SHOULD BE ADMINISTERED BY QUALIFIED PERSONNEL.

OCULAR/EYE CONTACT: Immediately flush affected eye(s) with clean water for at least 30 minutes,

washing under the eyelids. Seek immediate medical assistance.

DERMAL/SKIN CONTACT: Immediately remove contaminated clothing. Flush contact areas with water and then thoroughly cleanse the skin by washing with soap and water. If irritation or

redness develop and persist, seek medical assistance.

INHALATION/BREATHING: If symptoms of exposure develop, move away from source of exposure to vapors

or mists. If symptoms of exposure persist, seek medical assistance.

INGESTION/SWALLING:

If victim is conscious and alert, have them rinse mouth with water and then drink

milk or water. Seek medical assistance.

COMMENTS/PHYSICIAN INFO: This material is a viscous petroleum solvent-based mixture of organics, acids,

resins and amines which is moderately to severely irritating to the skin, eyes

and mucous membranes.

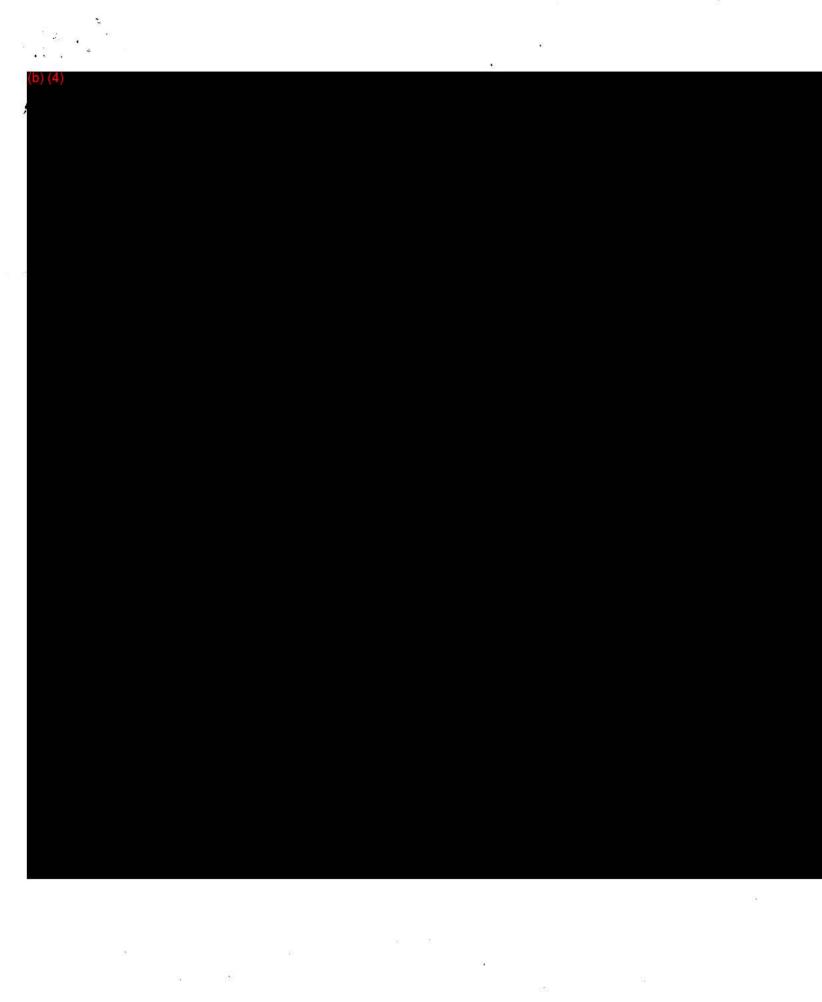
Material Safety Data Sheet

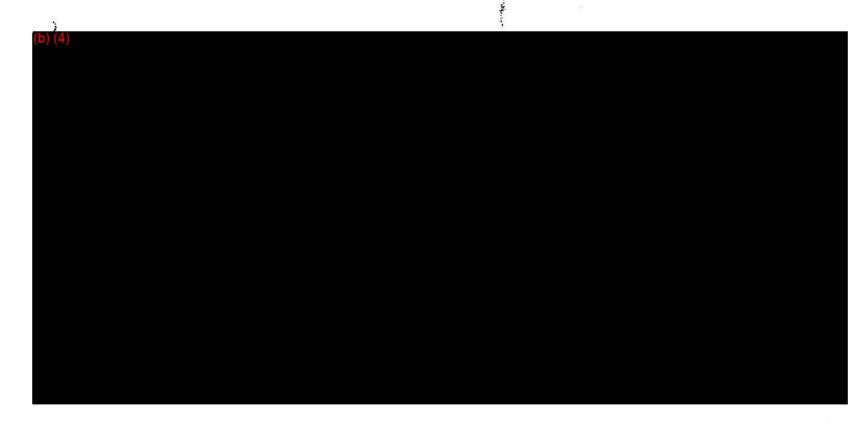
PRODUCT NAME:

QTX-102 -

Revision Date: April 26, 1996

_.....







HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name:

ZINC BROMIDE

Revision Date:

23-Jan-2006

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name:

ZINC BROMIDE

Synonyms:

None.

Chemical Family:

Metal Bromide

Application:

Additive

Manufacturer/Supplier

Baroid Drilling Fluids

a Product Service Line of Halliburton Energy Services, Inc.

P.O. Box 1675 Houston, TX 77251

Telephone: (281) 871-4000

Emergency Telephone: (281) 575-5000

Prepared By

Chemical Compliance

Telephone: 1-580-251-4335.

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Zinc bromide.	7699-45-8	60 - 100%	Not applicable.	Not applicable.

3. HAZARDS IDENTIFICATION

Hazard Overview

May cause eye, skin, and respiratory burns. May cause allergic skin reaction. May be

harmful if swallowed.

4. FIRST AID MEASURES

Inhalation If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably

mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 15

minutes. Get medical attention. Remove contaminated clothing and launder before

reuse.

Eyes In case of contact, or suspected contact, immediately flush eyes with plenty of water

for at least 15 minutes and get medical attention immediately after flushing.

Ingestion Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek

medical attention. Never give anything by mouth to an unconscious person.

Notes to Physician Not Applicable.

ZINC BROMIDE Page 1 of 6

FIRE FIGHTING MEASURES

Flash Point/Range (F):

Flash Point/Range (C): Flash Point Method:

Autoignition Temperature (F): Autoignition Temperature (C):

Flammability Limits in Air - Lower (%):

Flammability Limits in Air - Upper (%):

Not Determined.

Not Determined. Not Determined.

Not Determined.

Not Determined.

Not Determined. Not Determined.

Fire Extinguishing Media 😅 👙 All standard-firefighting media.

Special Exposure Hazards

Decomposition in fire may produce toxic gases.

Special Protective Equipment for Full protective clothing and approved self-contained breathing apparatus required for

Fire-Fighters

fire fighting personnel.

NFPA Ratings: HMIS Ratings:

Health 3, Flammability 0, Reactivity 0 Flammability 0, Reactivity 0, Health 3

ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment.

Environmental Precautionary

Measures

Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning /

Absorption

Scoop up and remove.

HANDLING AND STORAGE

Handling Precautions

Avoid contact with eyes, skin, or clothing. Wash hands after use. Launder

contaminated clothing before reuse.

Storage Information

Store in a cool, dry location. Keep container closed when not in use.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Use in a well ventilated area.

Respiratory Protection

Dust/mist respirator. (95%)

Hand Protection

Impervious rubber gloves.

Skin Protection

Rubber apron.

Eye Protection

Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions

Eyewash fountains and safety showers must be easily accessible.

PHYSICAL AND CHEMICAL PROPERTIES

Physical State:

Powder

Color:

Odor:

pH: Specific Gravity @ 20 C (Water=1):

Density @ 20 C (lbs./gallon):

Colorless to white

Odorless

4.22

Not Determined.

ZINC BROMIDE Page 2 of 6

PHYSICAL AND CHEMICAL PROPERTIES

Bulk Density @ 20 C (lbs/ft3): Boiling Point/Range (F): Boiling Point/Range (C): Freezing Point/Range (F):

Freezing Point/Range (C): Vapor Pressure @ 20 C (mmHg):

Vapor Density (Air=1): **Percent Volatiles:**

Evaporation Rate (Butyl Acetate=1): Solubility in Water (g/100ml):

Solubility in Solvents (g/100ml): VOCs (lbs./gallon):

Viscosity, Dynamic @ 20 C (centipoise): Viscosity, Kinematic @ 20 C (centistrokes): Partition Coefficient/n-Octanol/Water:

Molecular Weight (g/mole):

Not Determined.

Not Determined.

Not Determined: Not Determined.

Not Determined. Not Determined.

Not Determined. Not Determined. Not Determined.

Miscible

Not Determined. Not Determined. Not Determined. Not Determined.

Not Determined.

225.21

STABILITY AND REACTIVITY

Stability Data:

Stable.

Hazardous Polymerization:

Will Not Occur.

Conditions to Avoid

None known.

Incompatibility (Materials to

Avoid)

Potassium. Sodium.

Hazardous Decomposition

Products

Hydrogen bromide. Toxic fumes.

Additional Guidelines

Not Applicable.

TOXICOLOGICAL INFORMATION

Principle Route of Exposure

Eye or skin contact, inhalation.

Inhalation

Causes severe respiratory irritation.

Skin Contact

Causes severe skin irritation. May cause skin burns on prolonged contact.

Eye Contact

Causes severe eye irritation May cause eye burns.

Ingestion

Causes burns of the mouth, throat and stomach. May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation and central nervous system depression.

Aggravated Medical Conditions

Central nervous system disorders.

Chronic Effects/Carcinogenicity

May cause bromism characterized by disturbances of the central nervous system,

skin and digestive tract. May cause birth defects.

Other Information

None known.

Toxicity Tests

Oral Toxicity:

LD50: 1470 mg/kg (Rat)

Dermal Toxicity:

Not determined.

Inhalation Toxicity:

Not determined.

ZINC BROMIDE Page 3 of 6

Primary Irritation Effect:

Not determined.

Carcinogenicity

Not determined.

Genotoxicity:

Not determined.

Not determined.

Reproductive /

Developmental Toxicity:

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)

Not determined.

Persistence/Degradability

Not determined.

Bio-accumulation

Not Determined.

Ecotoxicological Information

Acute Fish Toxicity:

Not determined.

Acute Crustaceans Toxicity: Not determined.

Not determined. Not determined.

Acute Algae Toxicity:
Chemical Fate Information

Not determined.

Other Information

Not applicable.

13. DISPOSAL CONSIDERATIONS

Disposal Method

Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging

Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT

Corrosive Solid, Acidic, Inorganic, N.O.S., 8, UN3260, II (Contains Zinc Bromide), Marine Pollutant RQ (Zinc Bromide - 454 kg.) NAERG 154

Canadian TDG

Corrosive Solid, Acidic, Inorganic, N.O.S.(Contains Zinc Bromide), 8, UN3260, II, Marine Pollutant

ADR

UN3260, Corrosive Solid, Acidic, Inorganic, N.O.S. (Contains Zinc Bromide), 8, II, Marine Pollutant

Air Transportation

ICAO/IATA

UN3260, Corrosive Solid, Acidic, Inorganic, N.O.S., 8, II (Contains Zinc Bromide Mixture), Marine Pollutant RQ (Zinc Bromide - 454 kg.)

Sea Transportation

ZINC BROMIDE Page 4 of 6 IMDĠ

Corrosive Solid, Acidic, Inorganic, N.O.S. (Contains Zinc Bromide), 8, UN3260, II

, Marine Pollutant

RQ (Zinc Bromide - 454 kg.)

EmS F-A, S-B

Other Shipping Information

Labels:

Corrosive

Marine Pollutant

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory

All components listed on inventory.

EPA SARA Title III Extremely Hazardous Substances

Not applicable.

EPA SARA (311,312) Hazard

Class

Acute Health Hazard Chronic Health Hazard

EPA SARA (313) Chemicals

This product does not contain a toxic chemical for routine annual "Toxic Chemical

Release Reporting" under Section 313 (40 CFR 372).

EPA CERCLA/Superfund

EPA Reportable Spill Quantity is 1000 Pounds based on Zinc bromide (CAS: 7699-

Reportable Spill Quantity For This 45-8)

Product

EPA RCRA Hazardous Waste

Classification

If product becomes a waste, it does NOT meet the criteria of a hazardous waste as

defined by the US EPA.

California Proposition 65

All components listed do not apply to the California Proposition 65 Regulation.

MA Right-to-Know Law

Does not apply.

NJ Right-to-Know Law

Does not apply.

PA Right-to-Know Law

Does not apply.

Canadian Regulations

Canadian DSL Inventory

All components listed on inventory.

WHMIS Hazard Class

D2B Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS Not applicable.

ZINC BROMIDE Page 5 of 6

Additional Information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

END OF MSDS

ZINC BROMIDE Page 6 of 6

MATERIAL SAFETY DATA SHEET

Revision Date: 11/15/2004

MSDSUSA/ANSI/EN/150000000343/Version 4.0

Defergent-Hat WASh Clean Rows Dog

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name	Eastman(TM) Solvent R
Product Identification Number(s)	02860-00, P0286000, P0286001, E0286001
Manufacturer/Supplier	Eastman Chemical Company
	200 South Wilcox Drive
	Kingsport, TN 37660-5280
	US
	+14232292000
MSDS Prepared by	Eastman Product Safety and Health
Chemical Name	not applicable
Synonym(s)	02860-00 446320
Molecular Formula	not applicable
Molecular Weight	not applicable
Product Use	solvent
OSHA Status	hazardous

For emergency health, safety & environmental information, call 800-EASTMAN.

For emergency transportation information, call CHEMTREC at 800-424-9300 or call 800-EASTMAN.

2. COMPOSITION INFORMATION ON INGREDIENTS

(Typical composition is given, and it may vary. A certificate of analysis can be provided, if available.)

Weight % 80% 15%

5%

Component hydrocarbon C9-C12 hydrocarbon C14-16 hydrocarbon C18-C20 CAS Registry No. not available not available

3. HAZARDS IDENTIFICATION

WARNING!

PROLONGED OR REPEATED SKIN CONTACT MAY CAUSE DRYING, CRACKING, OR IRRITATION COMBUSTIBLE LIQUID AND VAPOR HIGH VAPOR CONCENTRATIONS MAY CAUSE DROWSINESS

HMIS® Hazard Ratings:

Health - 2, Flammability -2, Chemical Reactivity - 0

HMIS® rating involves data interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

4. FIRST-AID MEASURES

©COPYRIGHT 2004 BY EASTMAN CHEMICAL COMPANY

Visit our website at www.EASTMAN.com or call 001-423-229-2000.

EASTMAN

MATERIAL SAFETY DATA SHEET

Revision Date: 11/15/2004

MSDSUSA/ANSI/EN/150000000343/Version 4.0

Inhalation: If symptomatic, move to fresh air, Get medical attention if symptoms persist.

Eyes: Any material that contacts the eye should be washed out immediately with water. If easy to do,

remove contact lenses. Get medical attention if symptoms persist.

Skin: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash contaminated clothing before reuse. Destroy

or thoroughly clean contaminated shoes.

Ingestion: Seek medical advice.

5. FIRE FIGHTING MEASURES

Extinguishing Media: water spray, dry chemical, carbon dioxide, foam

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing. Use water spray to keep fire-exposed containers cool. USE WATER WITH CAUTION. Water may be ineffective in fighting the fire. Material will float and may ignite on surface of water. The fire could easily be spread by the use of water in an area where the water could not be contained.

Hazardous Combustion Products: carbon dioxide, carbon monoxide Unusual Fire and Explosion Hazards: Combustible.

6. ACCIDENTAL RELEASE MEASURES

Wear appropriate personal protective equipment. Eliminate all ignition sources. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste.

For Large Spills: Flush spill area with water spray. Prevent runoff from entering drains, sewers, or streams. Dike for later disposal.

7. HANDLING AND STORAGE

Personal Precautionary Measures: Avoid breathing high vapor concentrations. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling.

Prevention of Fire and Explosion: Keep away from heat, sparks, and flame. Keep from contact with oxidizing materials.

Storage: Keep container tightly closed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Country specific exposure limits have not been established or are not applicable unless listed below.

Ventilation: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust

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MSDSUSA/ANSI/EN/150000000343/Version 4.0

ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.

Eye Protection: It is a good industrial hygiene practice to minimize eye contact.

Skin Protection: Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

Recommended Decontamination Facilities: safety shower, washing facilities, eye bath

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: liquid
Color: light yellow
Odor: hydrocarbon
Specific Gravity: 0.93
Boiling Point: 177 - 368 °C
Solubility in Water: negligible
Flash Point: 41 °C (Tag open cup)

Thermal Decomposition Temperature: Thermal stability not tested. Low stability hazard expected

at normal operating temperatures.

10. STABILITY AND REACTIVITY

Stability:

Not fully evaluated. Materials containing similar structural groups

are normally stable.

Incompatibility:

Material reacts with strong oxidizing agents.

Hazardous Polymerization:

Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity data, if available, are listed below. Additional toxicity data may be available on request.

12. ECOLOGICAL INFORMATION

Acute toxicity data, if available, are listed below. Additional toxicity data may be available on request.

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This material has not been tested for environmental effects.

13. DISPOSAL CONSIDERATIONS

Discharge, treatment, or disposal may be subject to national, state, or local laws. Incinerate. Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. TRANSPORT INFORMATION

Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.

DOT (USA)

Class combustible liquid, Packing group III for quantities of 450 liters (119 gallons) or more; not regulated for smaller quantities

Possible Shipping Description(s):

not regulated

Hydrocarbons, liquid, n.o.s. combustible liquid (OIL) UN 3295 III

Sea - IMDG (International Maritime Dangerous Goods)

Possible Shipping Description(s):

HYDROCARBONS, LIQUID, N.O.S. 3 UN 3295 III

Air - ICAO (International Civil Aviation Organization)

Possible Shipping Description(s):

Hydrocarbons, liquid, n.o.s. 3 UN 3295 III

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Revision Date: 11/15/2004

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15. REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS (Canada) Status: controlled

WHMIS (Canada) Hazard Classification: B/3, D/2/B

SARA 311-312 Hazard Classification(s):

immediate (acute) health hazard fire hazard

SARA 313: none, unless listed below

Carcinogenicity Classification (components present at 0.1% or more): none, unless listed below

TSCA (US Toxic Substances Control Act): All components of this product are listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

16. OTHER INFORMATION

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The information contained herein is based on current knowledge and experience; no responsibility is accepted that the information is sufficient or correct in all cases. Users should consider these data only as a supplement to other information. Users should make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials, the safety and health of employees and customers, and the protection of the environment.

Highlighted areas indicate new or changed information.

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255 Norman. Lachine (Montreal), Que H8R 1A3

Material Safety Data Sheet

EMERGENCY NUMBERS:

(USA) CHEMTREC: 1(800) 424-9300 (24hrs) (CAN) CANUTEC: 1(613) 996-6666 (24hrs) (USA) Anachemia: 1(518) 297-4444 (CAN) Anachemia: 1(514) 489-5711

1	WHMIS	Protective Clothing	TDG Road/Rail
	WHMIS CLASS: D-2B		Not controlled under TDG (Canada).
١			PIN: Not applicable. PG: Not applicable.

Product name	DODECYL ALCOHOL	CI#	Not available.
Chemical formula	CH3(CH2)11OH	CAS#	112-53-8
Synonyms	1-Dodecanol, Lauryl alcohol, AC-3934, 36984	Code	AC-3934
		Formula weight	186.34
Supplier	Anachemia Canada. 255 Norman. Lachine (Montreal), Que H8R 1A3	Supersedes	
Material uses	For laboratory use only.		

Section II. Ingredients			
Name	CAS#	%	TLV
1) DODECYL ALCOHOL	112-53-8	98	Not established by ACGIH
		ļ	
			ì
		}	
		{	
		ļ	
		1	

Toxicity values of the hazardous ingredients DODECYL ALCOHOL:

ORAL (LD50): Acute: 4150 mg/kg (Rat). 1170 mg/kg (Mouse). DERMAL (LD50): Acute: >10 ml/kg (Guinea pig). INTRAVENOUS (LD50): Acute: 390 mg/kg (Rat).

Section III. Phys	DODECYL ALCOHOL	pa	ge 2/4
Physical state and appearance / Odor	Moist white solid.		
pH (1% soln/water)	Not applicable.		
Odor threshold	Not available.		
Percent volatile	Not available.		
Freezing point	24 to 27°C		
Boiling point	260 to 262°C		
Specific gravity	0.82 (Water = 1)		
Vapor density	7.4 (Air = 1)		
Vapor pressure	0.1 mm of Hg (@ 20°C)		
Water/oil dist. coeff.	Not available.		
Evaporation rate	Not available.		
Solubility	Insoluble in cold water.		***************************************

	re and Explosion Data
Flash point	CLOSED CUP: >109°C
Flammable limits	LOWER: 0.6% UPPER: 4%
Auto-ignition temperat	ure 259°C
Fire degradation products	Oxides of carbon (CO, CO2).
products Fire extinguishing	Use DRY chemical, carbon dioxide, or foam. Water or foam may cause frothing. Wear adequate personal protection t
	Use DRY chemical, carbon dioxide, or foam. Water or foam may cause frothing. Wear adequate personal protection to prevent contact with material or its combustion products. Self contained breathing apparatus with a full facepiece
products Fire extinguishing procedures Fire and Explosion	Use DRY chemical, carbon dioxide, or foam. Water or foam may cause frothing. Wear adequate personal protection to prevent contact with material or its combustion products. Self contained breathing apparatus with a full facepiece operated in a pressure demand or other positive pressure mode. The sensitivity to static discharge is not available. The sensitivity to impact is not available. When heated to

Routes of entry	Ingestion and inhalation. Eye contact. Skin contact. Skin absorption.
Effects of Acute Exposure	Harmful by ingestion, inhalation or skin absorption. Irritant.
Eye	Causes severe irritation.
Skin	Causes skin irritation.
Inhalation	Material is irritating to mucous membranes and upper respiratory tract.
Ingestion	No specific information is available on this material.

Section V. Toxicological Properties

DODECYL ALCOHOL

page 3/4

Effects of Chronic Overexposure Carcinogenic effects: Not available. Mutagenic effects: Not available. Teratogenic effects: Not available. Toxicity of the product to the reproductive system: Not available. To the best of our knowledge, the chemical, physical, and toxicity of this substance has not been fully investigated.

Section VI.	First Aid Measures
Eye contact	Immediately flush eyes with copious quantities of water for at least 15 minutes holding lids apart to ensure flushing of the entire surface. Call a physician.
Skin contact	Immediately flush skin with plenty of water and soap for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash contaminated clothing before reusing.
	en e
Inhalation	Remove patient to fresh air. Administer approved oxygen supply if breathing is difficult. Administer artificial respiration of CPR if breathing has ceased. Call a physician.
Ingestion	If conscious, wash out mouth with water. Never give anything by mouth to an unconscious or convulsing person.
g	Call a physician.

Hazardous decomp. products Oxidizing agents, bases, acids, acid anhydrides, acid chlorides, halogens, acetaldehyde, ethylene oxide, hexame diisocyanate, hydrogen peroxide, sulfuric acid, hypochlorous acid, diisocyanates, isocyanates, lithium aluminum nitrogen teroxide, perchloric acid, barium perchlorate, diethyl aluminum bromide, tri-isobutyl aluminum.	Stability	Stable. Conditions to avoid: High temperatures, sparks, open flames and all other sources of ignition, contamination.
diisocyanate, hydrogen peroxide, sulfuric acid, hypochlorous acid, diisocyanates, isocyanates, lithium aluminum nitrogen teroxide, perchloric acid, barium perchlorate, diethyl aluminum bromide, tri-isobutyl aluminum.	•	Not available.
	Incompatibility	Oxidizing agents, bases, acids, acid anhydrides, acid chlorides, halogens, acetaldehyde, ethylene oxide, hexamethylene diisocyanate, hydrogen peroxide, sulfuric acid, hypochlorous acid, diisocyanates, isocyanates, lithium aluminum hydride nitrogen teroxide, perchloric acid, barium perchlorate, diethyl aluminum bromide, tri-isobutyl aluminum.
	: :	
Reaction Products Not available. Hazardous polymerization will not occur.	Reaction Products	Not available. Hazardous polymerization will not occur.

DODECYL ALCOHOL page 4/4 Section VIII. Preventive Measures Protective Clothing in Wear respirator, chemical safety goggles, rubber boots and heavy rubber gloves. case of spill and leak Spill and leak Evacuate the area. Eliminate all sources of ignition. Absorb on sand or vermiculite and place in a closed container for disposal. Avoid raising dust. Ventilate area and wash spill site after material pick up is complete. DO NOT empty into drains. DO NOT touch damaged container or spilled material. Waste disposal Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an after burner and scrubber. According to all applicable regulations. Store in a cool place away from heated areas, sparks, and flame. Store in a well ventilated area. Store away from Storage and Handling incompatible materials. Do not add any other material to the container. Do not wash down the drain. Do not breathe dust. Keep container tightly closed and dry. Manipulate in a well ventilated area or under an adequate fume hood. Avoid raising dust. Empty containers may contain a hazardous residue. Handle and open container with care. Minimize dust generation and exposure - use dust mask or appropriate protection. Take off immediately all contaminated clothing. This product must be manipulated by qualified personnel. Do not get in eyes, on skin, or on clothing. Wash well after use. In accordance with good storage and handling practices. Do not allow smoking and food consumption while handling.

Section IX. Protective Measures Protective clothing Splash goggles. Impervious rubber gloves, apron, coveralls, and/or other resistant protective clothing. Sufficient to protect skin. A OSHAMSHA jointly approved respirator is advised in the absence of proper environmental controls. Do not wear contact lenses. Make eye bath and emergency shower available. Ensure that eyewash station and safety shower is proximal to the work-station location. Engineering controls Local mechanical exhaust ventilation capable of minimizing dust emissions at the point of use. Do not use in unventilated spaces.

Section X. Other Information Special Precautions or Harmful solid! Irritant! Do not breathe dust. Avoid all contact with the product. Avoid prolonged or repeated exposure. Manipulate in a well ventilated area or under an adequate fume hood. Keep away from heat, sparks and flame. Handle and open container with care. Container should be opened only by a technically qualified person. RTECS NO: JR5775000 (Dodecyl alcohol).



NFPA

Prepared by MSDS Department/Département de F.S..

Validated 10-Mar-2005

Telephone# (514) 489-5711

While the company believes the data set forth herein are accurate as of the date hereof, the company makes no warranty with respect thereto and expressly disclaims all liability for reliance thereon. Such data are offered solely for your consideration, investigation and verification.



Trade name: Di-sec-butylamine

Status: 12.02.2003

subst.code: 36748

Version: 5 / Def

Date of printing: 07.03.2003

Product no.: IVTP005

1.) Identification of the substance/preparation and company

Product details

Trade name

Di-sec-butylamine

Use

chemical intermediates (including monomers)

Identification of the manufacturer / supplier

Address

Celanese Chemicals Europe GmbH

Frankfurter Straße 111

D-61476 Ki

Kronberg/Ts.

Information provided by / telephone

EHSA Europe FAX-Nr.: +49 (0) 208 693 2053

Emergency telephone

+49 (0) 69-305 6418

number

2.) Composition / information on ingredients

Chemical characterization

Di-(1-methylpropyl) amine

Substance / product identification

CAS no. 626-23-3

Index no.

612-049-00-0

EINECS no.

210-937-9

ELINCS number:

Hazardous ingredients

Di-sec-butylamine

CAS no.

626-23-3

EINECS no.
Concentration

210-937-9 >= 98,5

%-b.w.

%-b.w.

Classification

R10

Xn;R20/21/22

3.) Hazards possibilities

Hazard symbols

F

Highly flammable

Т

Toxic

R phrases

11

Highly flammable.

20/22

Harmful by inhalation and if swallowed.

24

Toxic in contact with skin.

35

Causes severe burns.

page: 1(7)



Trade name: Di-sec-butylamine

subst.code: 36748

Product no.: IVTP005

Version: 5 / Def

Status: 12.02.2003

Date of printing: 07.03.2003

4.) First aid measures

General Information

Remove contaminated clothing immediately and dispose of safely.

After inhalation

When inhaled remove to fresh air and seek medical aid.

After skin contact

Rinse affected skin for at least ten minutes with cold water, then bathe in 3% acetic acid for 30 minutes. Treat wounds like burn wounds. Immediate medical treatment necessary, as untreated burns can result in slow-healing wounds

After eye contact

In case of contact with eyes rinse thoroughly with plenty of lukewarm water and seek medical advice

After ingestion

Summon a doctor immediately.

Advice to doctor

Symptoms

Shortness of breath; Convulsions; Coughing; hypertensive effect

Hazards

Risk of stomach perforation; Risk of pulmonary oedema

Treatment

Symptoms appear mostly after several hours. If swallowed, flush stomach; Continue to monitor for pneumonia and pulmonary oedema. Treat skin and mucous membranes with antihistamines and corticosteroid preparations. In the event of pulmonary irritation treat initially with dexamethasone - dosing aerosol.

5.) Fire-fighting measures

Suitable extinguishing media

Foam; Dry powder; Carbon dioxide; Water spray jet

Extinguishing media that must not be used for safety reasons

strong water jet

Special exposure hazards arising from the substance or preparation itself, its combustion products or from resulting gases

In case of fires, hazardous combustion gases are formed: Carbon monoxide (CO). Carbon dioxide (CO2); Nitrous gases (NOx); Combustion gases of organic materials must in principle be graded as inhalation poisons.

Special protective equipment for firefighting

Use self-contained breathing apparatus.

Other information (chapter 5.)

Cool endangered environment with water spray jet.

6.) Accidental release measures

Personal precautions

Avoid contact with eyes and skin. Keep away sources of ignition. Ensure adequate ventilation.

Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers). Do not discharge into the drains/surface waters/groundwater.

page: 2(7)



Trade name: Di-sec-butylamine

subst.code: 36748

Product no.: IVTP005

Version: 5 / Def

Status: 12.02.2003

Date of printing: 07.03.2003

Methods for cleaning up/taking up

Pick up with absorbent material (eg sand, kieselgur, acid binder, universal binder, sawdust). Dispose of contaminated material as prescribed

7.) Handling and storage

Handling

Advice on safe handling

Provide good ventilation of working area (local exhaust ventilation if necessary). Transfer and handle only in enclosed systems.

Advice on protection against fire and explosion

Keep away from sources of ignition - refrain from smoking. Take precautionary measures against static charges. In case of fire, emergency cooling with water spray should be available

Temperature class

T2

Use

Agrochemicals

Storage

Hints on storage assembly

Keep in cool, well ventilated place away from acids; Do not store with strong oxidizing agents.

Further information on storage conditions

Keep container tightly closed. Store under nitrogen

Exposure controls / personal protection

Ingredients with occupational exposure limits to be monitored

None

Personal protective equipment

Respiratory protection

filter apparatus, filter A; Full mask with above mentioned filter according to producers using requirements or self-contained breathing apparatus.

Hand protection

Chemical resistant gloves

Appropriate Material

Type

evaluation

evaluation

Nitrile rubber

Fleximax (Company COMASEC) or comparable article; or refer to glove

producer recommendation. according to EN 374: level 6

Material thickness Time for permeation

Chemical resistant gloves

Appropriate Material

Material thickness

Type

appr. 0,55

480

Strongoflex Double Dip (Company NorthChem) or comparable article; or

refer to glove producer recommendation. Suitable according to practical experience.

appr. 0,8

mm

min

Eye protection

Tightly fitting safety glasses

page: 3(7)



Trade name: Di-sec-butylamine

subst.code: 36748

Product no.: IVTP005

Version: 5 / Def

Status: 12.02.2003

Date of printing: 07.03.2003

Skin protection

protective clothing

General protective and hygiene measures

Contact with eyes and skin must be avoided; Do not inhale vapours. Hold emergency shower available.

Hygenic measures

Do not eat, drink or smoke during work time. Remove soiled or soaked clothing immediately. Wash hands before breaks and after work. Clean skin thoroughly after work; apply skin cream.

9.) Physical and chemical properties

٩	р	р	ea	ır	a	n	C	е

Form

liquid

Colour

colourless amine-like

Odour

Safety data

Changes in physical state

type

Melting temperature

Value

-60

Changes in physical state

type Value

Boiling temperature

134

1013 hPa

Method

Pressure

Value

Flash point

20 DIN 51755

Ignition temperature

Value Method

320 DIN 51794

°C

hPa

°C

Vapour pressure

Value

appr. 14 20

°C

Reference temperature Method

calculated

°C

°C

°C

°C

Value

60

Reference temperature

appr. 50 hPa

Method

calculated

Density

Value Method

0.753 **DIN 51757**

20

g/cm³

Reference temperature

Viscosity type

dynamic 1.2

Value

Reference temperature

20

mPa*s

Solubility in water

Value

Reference temperature

20

g/I

page: 4(7)



Trade name: Di-sec-butylamine

subst.code: 36748 Product no.: IVTP005

Version: 5 / Def

Status: 12.02.2003

Date of printing: 07.03.2003

pH value

Value

appr. 11.5

Reference temperature Concentration

20

g/I

Octanol/water partition coefficient (log Pow)

Value

2.2

Method

Calculation Hansch/Leo

Other information (chapter 9.)

Incompatible substances: Acids.

10.) Stability and reactivity

Hazardous decomposition

None

products

Hazardous reactions

Reactions with acids and strong oxidising agents.

°C

Thermal decomposition

Remarks

No decomposition if used as prescribed.

- 400

11.) <u>Toxicological information</u>

Acute toxicity

Acute oral toxicity

LD50

308

mg/kg

Species

rat

Acute dermal toxicity

LD50

200

mg/kg

Species

rabbit

Irritant/corrosive effects

Irritant effect on skin

Species

rabbit

evaluation

strongly corrosive

Irritant effect on eyes

Species

rabbit eye

evaluation

strongly corrosive

Other information

Serious toxic effects are possible in case of contact with large areasof skin; Symptomes of poisoning may only appear after several hours

12.) <u>Ecological information</u>

Data on elimination (persistence and degradability)

Biodegradability

Value

Method

OECD 302 B

evaluation

not readily degradable

page: 5(7)



Trade name: Di-sec-butylamine

subst.code: 36748 Product no.: IVTP005 Version: 5 / Def

Status: 12.02.2003

Date of printing: 07.03.2003

Ecotoxic effects

Fish toxicity

LC50 **Species**

80 appr. zebra fish mg/l

Duration of exposure

96

Method

OECD 203

Bacteria toxicity

EC0

500

mg/l

Species Method

activated sludge fermentation tube test

General information / ecology

Remarks

Do not discharge product unmonitored into the environment.

13.) <u>Disposal considerations</u>

Disposal required in compliance with all waste management related local regulations.

The choice of the appropriate method of disposal depends on the product composition by the time of disposal as well as the local statutes and possibilities for disposal.

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

14.) <u>Transport information</u>

Land transport ADR/RID

UN number 2733

Technical name Amines, flammable, corrosive, n.o.s.

Danger releasing substance (Di-sec-butylamine)

Packaging group II Hazard no. 338

Inland waterways transport ADNR

Regulatory information ADNR: Container -Ship and Tanker

UN number

Technical name Amines, flammable, corrosive, n.o.s.

Danger releasing substance (Di-sec-butylamine)

Class

11 Packaging group

Marine transport IMDG

UN number 2733

Propper shipping name Amines, flammable, corrosive, n.o.s.

Danger releasing substance (Di-sec-butylamine)

Class

Packaging group **EmS**

3-02 (Amdt 30-00) F-E, S-C (Amdt 31-02)

page: 6(7)



Trade name: Di-sec-butylamine

subst.code: 36748 Product no.: IVTP005 Version: 5 / Def

Status: 12.02.2003

Date of printing: 07.03.2003

Air transport ICAO/IATA

UN number

2733

Propper shipping name

Amines, flammable, corrosive, n.o.s.

Danger releasing substance

(Di-sec-butylamine)

Class

Packaging group

Dispatch by post

Not permitted

15.) Regulatory information

Hazardous component(s) to be indicated on label

Di-sec-butylamine

Labelling in accordance with EC directives

"EC-labelling"

Hazard symbols

Xn

Harmful

R phrases

10

Flammable.

20/21/22

Harmful by inhalation, in contact with skin and if swallowed.

Water Hazard Class (Ger.)

Class

1

Source

Classification according to VwVwS, Annex 3

16.) Other information

Other information

Observe national and local legal requirements

R phrases

Di-sec-butylamine

10

Flammable.

20/21/22

Harmful by inhalation, in contact with skin and if swallowed.

This information is based on our present state of knowledge. It shall describe our products regarding safety requirements and shall not be construed as a guarantee or statement of condition and/or quality.

page: 7(7)

Material Safety Data Sheet



Dipropylene Glycol

Section 1. Chemical product and company identification

Product Name

: Dipropylene Glycol

Supplier

: AIRGAS INC., on behalf of its subsidiaries

259 North Radnor-Chester Road

Suite 100

Radnor, PA 19087-5283 1-610-687-5253

Synonym

: dipropylene glycol

MSDS#

: 001111

Date of

: 9/27/2006.

Preparation/Revision

In case of emergency

: 1-866-734-3438

Section 2. Hazards identification

Physical state

: Liquid.

Emergency overview

: Warning!

CAUSES DAMAGE TO THE FOLLOWING ORGANS: SKIN, EYES.

COMBUSTIBLE LIQUID AND VAPOR.

VAPOR MAY CAUSE FIRE.

Keep away from heat, sparks and flame. Keep container closed. Use only with

adequate ventilation.

tential acute health effects

_yes

: May cause severe eye irritation.

Skin

This product may irritate skin upon contact.

Inhalation

: Harmful by inhalation. Harmful if swallowed.

Ingestion

Potential chronic health

effects

: CARCINOGENIC EFFECTS Not available. **MUTAGENIC EFFECTS** Not available.

TERATOGENIC EFFECT: Not available.

Medical conditions

: Repeated or prolonged exposure is not known to aggravate medical condition. aggravated by overexposure

See toxicological Information (section 11)

Section 3. Composition, Information on Ingredients

United States

25265-71-8 100 **Exposure limits**

propanol, oxybis-

Section 4. First aid measures

Eye contact

: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin contact

: In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Inhalation

: If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

...gestion

: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms

appear.

Dipropylene Glycol

ection 5. Fire fighting measures

Flammability of the product: May be combustible at high temperature.

Auto-ignition temperature

: 310°C (590°F)

Products of combustion

: These products are carbon oxides (CO, CO₂).

Fire hazards in presence of : Highly flammable in presence of heat.

various substances

Fire fighting media and

instructions

: In case of fire, use water spray (fog), foam, dry chemicals, or CO 2.

Combustible liquid and vapor. Vapor may cause flash fire. Vapors may accumulate in low or confined areas, travel considerable distance to source of ignition and flash back.

Runoff to sewer may create fire or explosion hazard.

Special protective equipment for fire-fighters : Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full facepiece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions

: Immediately contact emergency personnel. Eliminate all ignition sources. Keep unnecessary personnel away. Use suitable protective equipment (Section 8). Do not touch or walk through spilled material.

Environmental precautions

: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Methods for cleaning up

: If emergency personnel are unavailable, contain spilled material. For small spills add absorbent (soil may be used in the absence of other suitable materials) and use a nonsparking or explosion proof means to transfer material to a sealed, appropriate container for disposal. For large spills dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

Section 7. Handling and storage

Handling

: Keep container closed. Use only with adequate ventilation. Keep away from heat, sparks and flame. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.

Storage

Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Section 8. Exposure Controls, Personal Protection

Engineering controls

: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal protection

Eyes

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or

Skin

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory

: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

.dands

: Chemical-resistant, impervious gloves or gauntlets complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

of a large spill

Personal protection in case: Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Product name

Exposure limits

Dipropylene Glycol

United States panol, oxybis-

Section 9. Physical and chemical properties

Physical state

: Liquid.

Color

Colorless.

Odor

Odorless.

Molecular weight

134.2 g/mole

Molecular formula

: C6-H14-O3

Boiling/condensation point : 228°C (442.4°F)

Melting/freezing point

Specific gravity

: -40°C (-40°F) : 1.02 (Water = 1)

Evaporation rate

: <0.01 compared to Butyl acetate.

Section 10. Stability and reactivity

Stability and reactivity

The product is stable.

Incompatibility with various: Reactive with oxidizing agents.

substances

Section 11. Toxicological information

Ingredient name

Test

Route

Species

propanol, oxybis-

LD50

14850 ma/ka

Oral

Rat

Chronic effects on humans : Causes damage to the following organs; skin, eyes.

other toxic effects on

humans

: Not considered to be toxic for humans.

Specific effects

Carcinogenic effects

: No known significant effects or critical hazards.

Mutagenic effects

: No known significant effects or critical hazards.

Reproduction toxicity

: No known significant effects or critical hazards.

Section 12. Ecological information

Products of degradation

: These products are carbon oxides (CO, CO₂) and water.

Toxicity of the products of

: The product itself and its products of degradation are not toxic.

biodegradation

Section 13. Disposal considerations

Waste disposal

: The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Consult your local or regional authorities.

Section 14. Transport information

agulatory ormation	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	Not regulated.	-	-	-	0	-
TDG Classification	Not regulated.	-	-	-		-
Mexico Classification	Not regulated.		-	-		-
	-					

Section 15. Regulatory information

United States

HCS Classification

: Combustible liquid

Target organ effects

.S. Federal regulations

: TSCA 8(b) inventory: propanol, oxybis-

SARA 302/304/311/312 extremely hazardous substances: No products were found. SARA 302/304 emergency planning and notification: No products were found. SARA 302/304/311/312 hazardous chemicals: No products were found.

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No

products were found.

Clean Water Act (CWA) 307: No products were found. Clean Water Act (CWA) 311: No products were found.

Clean air act (CAA) 112 accidental release prevention: No products were found. Clean air act (CAA) 112 regulated flammable substances: No products were found. Clean air act (CAA) 112 regulated toxic substances: No products were found.

State regulations

: Pennsylvania RTK: propanol, oxybis-: (generic environmental hazard)

<u>Canada</u>

WHMIS (Canada)

: Not controlled under WHMIS (Canada).

CEPA DSL: propanol, oxybis-

Section 16. Other information

Label Requirements

: CAUSES DAMAGE TO THE FOLLOWING ORGANS: SKIN, EYES.

COMBUSTIBLE LIQUID AND VAPOR.

VAPOR MAY CAUSE FIRE.

Hazardous Material Information System (U.S.A.)

Health * 1
Fire hazard 1
Reactivity 0
Personal protection A

National Fire Protection Association (U.S.A.)

Health 1 0 Instability
Special

Dipropy lene Glycol

Notice to reader

the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

..... Colorano Ore vven Catalogue

Material Safety Data Sheet

Di-n-butylamine

**SDS# 06410

Section 1 - Chemical Product and Company Identification

MSDS Name:

Di-n-butylamine

Catalog Numbers:

11295-5000, D/1338/07, D/1338/PB07, D/1340/08, D/1340/PB08

Synonyms:

N-Butyl-1-butanamine; Di-n-butylamine; secondary alkyl amine.

Company Identification: Fisher Scientific UK

Bishop Meadow Road, Loughborough

Leics. LE11 5RG

For information in Europe, call: (01509) 231166

Emergency Number, Europe: 01509 231166

Section 2 - Composition, Information on Ingredients

111-92-2

Chemical Name: Di-n-butylamine

왕:

99

EINECS#: 203-921-8

Hazard Symbols:

Risk Phrases:

10 20/21/22 34

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Flammable. Harmful by inhalation, in contact with skin and if

swallowed. Causes burns.

Potential Health Effects

Eye:

Causes eye burns.

Skin:

Harmful if absorbed through the skin. Causes skin burns.

Inquestion:

Harmful if swallowed. Causes gastrointestinal tract burns.

Harmful if inhaled. Causes chemical burns to the respiratory tract.

Chronic:

Chronic exposure may cause effects similar to those of acute

exposure.

Section 4 - First Aid Measures

Eyes:

Get medical aid immediately. Immediately flush eyes with plenty of

water for at least 15 minutes.

Skin:

Get medical aid immediately. Rinse area with large amounts of water

for at least 15 minutes.

ingestion:

Do not induce vomiting. If victim is conscious and alert, give 2-4

cupfuls of milk or water. Get medical aid immediately.

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Inhalation:

Get medical aid immediately. Remove from exposure and move to fresair immediately. If not breathing, give artificial respiration. If breathing has ceased apply artificial respiration using oxygen and suitable mechanical device such as a bag and a mask.

Notes to Physician:

Section 5 - Fire Fighting Measures

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Use water spray to keep fire-exposed containers cool. Flammable liquid and vapor. Vapors are heavier than air and matricel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.

Extinguishing Media:

Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Section 6 - Accidental Release Measures

General Information:

Use proper personal protective equipment as indicated in Section 8. Spills/Leaks:

Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Provide ventilation. Approach spill from upwind. Use water spray to cool and disperse vapors and protect personnel.

Section 7 - Handling and Storage

.ndling:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Do not ingest or inhale. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Keep away from heat, sparks and flame.

Storage:

Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

CAS# 111-92-2:

Germany: 5 ppm TWA (exposure factor 1); 29 mg/m3 TWA (exposure factor 1)

`rmany: skin notation

Larsonal Protective Equipment

Eyes:

Wear chemical splash goggles and face shield.

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Skin:
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Wear appropriate gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin

exposure.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State:

Liquid

Color:

clear, colorless

Odor:

amine-like - malodorous

: Hg

12.2 (0.1M ag soln)

Vapor Pressure:

2.59 mm Hg @ 25 deg C

Viscosity:

0.9 mPa s 20 C

Boiling Point:

159 deg C (318.20F)

Freezing/Melting Point:

-62 deg C (-79.60F)

Autoignition Temperature:

260 deg C (500.00 deg F)

Flash Point:

39 deg C (102.20 deg F)

Explosion Limits: Lower: .60 Explosion Limits: Upper: 6.80

Decomposition Temperature: Not available

Colubility in water:

Slightly soluble

ecific Gravity/Density: Molecular Formula:

0.76 C8H19N

Molecular Weight:

129.24

Section 10 - Stability and Reactivity

Chemical Stability:

Stable under normal temperatures and pressures. Amines absorb carbon dioxide from the air to form carbamate salts.

Conditions to Avoid:

Ignition sources.

Incompatibilities with Other Materials

Strong oxidizing agents, strong acids.

Hazardous Decomposition Products

Nitrogen oxides, carbon monoxide, carbon dioxide.

Hazardous Polymerization

Will not occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 111-92-2: HR7780000

LD50/LC50:

RTECS: CAS# 111-92-2: Oral, mouse: LD50 = 290 mg/kg; Oral, rat: LD50 = 189 mg/kg; Skin, rabbit: LD50 = 770 mg/kq;.

ther: Inhalation, rats LC50: > 2.0 mg/l/1H (Mortality was not wserved.) Air Products & Chemicals; Inhalation, rats LC50: > 573 ppm/1H (Mortality was not observed.) Huntingdon Research Centre; Inhalation, rats LC50: 1.15 mg/l/4H. Huntingdon Research Centre.

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Carcinogenicity:

Di-n-butylamine -

inot listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

her:

See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Not available

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

IATA

Shipping Name: Di-n-BUTYLAMINE

Hazard Class: 8 (3)
UN Number: 2248
Packing Group: II

OMI

Shipping Name: DI-n-BUTYLAMINE

Hazard Class: 8 (3)
UN Number: 2248
Packing Group: II

RID/ADR

Shipping Name: DI-n-BUTYLAMINE

Hazard Class: 8 (3)
UN Number: 2248
Packing Group: II

Section 15 - Regulatory Information

European Labeling in Accordance with EC Directives

Hazard Symbols: C Risk Phrases:

R 10 Flammable.

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R 34 Causes burns.

Safety Phrases:

S 23 Do not inhale gas/fumes/vapour/spray.

S 26 In case of contact with eyes, rinse immediately

with plenty of water and seek medical advice. S 28 After contact with skin, wash immediately

with...

S 36/37/39 Wear suitable protective clothing, gloves

and eye/face protection.

S 45 In case of accident or if you feel unwell, seek

medical advice immediately (show the label where

possible).

WGK (Water Danger/Protection)
CAS# 111-92-2: 1

Fisher Scientific UK Web Catalogue

Section 16 - Other Information

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MSDS Creation Date: 12/12/1997 Revision #7 Date

5/16/2007

Section 16 - Other Information

MSDS Creation Date: 12/12/1997 Revision #7 Date 5/16/2007 Revisions were made in Sections:

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The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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Material Safety Data Sheet

Diisopropylbenzene (Tech), 98% (GC)

~SDS# 31799

Section 1 - Chemical Product and Company Identification

MSDS Name:

Diisopropylbenzene (Tech), 98% (GC)

Catalog Numbers:

40781-0000, 40781-0010, 40781-0030

Synonyms:

Company Identification: Fisher Scientific UK

Bishop Meadow Road, Loughborough

Leics. LE11 5RG

For information in Europe, call: (01509) 231166

Emergency Number, Europe: 01509 231166

Section 2 - Composition, Information on Ingredients

CAS#: 25321-09-9

Chemical Name: Diisopropylbenzene

98

EINECS#:

246-835-6

Hazard Symbols:

None listed

Risk Phrases:

None listed

Section 3 - Hazards Identification EMERGENCY OVERVIEW

Not available

'otential Health Effects

'ye:

Causes eye irritation.

kin:

Causes skin irritation.

agestion:

May cause irritation of the digestive tract.

halation:

May cause respiratory tract irritation.

ronic:

Section 4 - First Aid Measures

18:

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

1:

Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

stion:

If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

ation:

Remove from exposure and move to fresh air immediately. If not

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.... scientific UK Web Catalogue

breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

otes to Physician:

Section 5 - Fire Fighting Measures

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media:

Use agent most appropriate to extinguish fire.

Section 6 - Accidental Release Measures

General Information:

Use proper personal protective equipment as indicated in Section 8. Spills/Leaks:

> Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal.

> > Section 7 - Handling and Storage

Handling:

Wash thoroughly after handling. Use only in a well-ventilated area. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation.

Storage:

Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

__ngineering Controls:

Use adequate ventilation to keep airborne concentrations low.

Exposure Limits CAS# 25321-09-9:

Personal Protective Equipment

Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

kin:

Wear appropriate protective gloves to prevent skin exposure.

othing:

Wear appropriate protective clothing to prevent skin exposure.

pirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

ical State:

Clear liquid Not available Not available

_ _.. vveo Catalogue

: Hq Not available Vapor Pressure: 0.25 mm Hq @25C "iscosity: Not available 77.0 - 82.0 deg C @ 10.00mm H jiling Point: Not available Freezing/Melting Point: Autoignition Temperature: Not available 71 deg C (159.80 deg F) Flash Point: Explosion Limits: Lower: Not available Explosion Limits: Upper:Not available Decomposition Temperature: Not available Not available Solubility in water: Specific Gravity/Density: .8570q/cm3Molecular Formula: C12H18 Molecular Weight: 162.27 Section 10 - Stability and Reactivity Chemical Stability: Stable under normal temperatures and pressures. Conditions to Avoid: Incompatible materials. Incompatibilities with Other Materials Strong oxidizing agents. Hazardous Decomposition Products Irritating and toxic fumes and gases. Hazardous Polymerization Has not been reported. Section 11 - Toxicological Information ECS#: CAS# 25321-09-9: CZ6330000 LD50/LC50: RTECS: CAS# 25321-09-9: Draize test, rabbit, eye: 500 19/24H Mild; Draize test, rabbit, skin: 100 mg/24H Moderate; ral, rat: LD50 = 6500 uL/kg; Skin, rabbit: LD50 = 16 L/kg;. arcinogenicity: Diisopropylbenzene ot listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65. e actual entry in RTECS for complete information. Section 12 - Ecological Information ler: Section 13 - Disposal Considerations pose of in a manner consistent with federal, state, and local regulations. Section 14 - Transport Information Shipping Name: Not regulated as a hazardous material Hazard Class: UN Number: Packing Group: Not regulated as a hazardous material Shipping Name: Hazard Class: UN Number:

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Fisher Scientific UK Web Catalogue

Packing Group:

· RID/ADR

Shipping Name:

Not regulated as a hazardous material

Hazard Class: UN Number: Packing Group:

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: Not available

Risk Phrases: Safety Phrases:

S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 25321-09-9: 1

Canada

CAS# 25321-09-9 is listed on Canada's DSL List

US Federal

TSCA

CAS# 25321-09-9 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date:

3/24/1998

Revision #4 Date

3/16/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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ASDS Number: D3416 * * * * * Effective Date: 07/06/06 * * * * * Supercedes: 11/10/05



From: Mallinckrodt Baker, Inc. 222 Red School Lane Phillipsburg, NJ 08865



24 Hour Emergency Telephone: 908-859-2151

CHEMTREC: 1-800-424-9300

National Response in Canada CANUTEC: 613-996-6666

Outside U.S. And Canada Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

DIETHYLENETRIAMINE

1. Product Identification

Synonyms: DETA; bis (2-aminoethyl) amine, 2,2'-Diaminodiethylamine; Aminoethylethandiamine

CAS No.: 111-40-0

Molecular Weight: 103.17

Chemical Formula: NH2C2H4NHC2H4NH2

Product Codes: H768

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Diethylene Triamine	111-40-0	100%	Yes

3. Hazards Identification

Emergency Overview

DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE ALLERGIC SKIN OR RESPIRATORY REACTION.

SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 3 - Severe (Life)

httn://www.itbaker.com/msds/englishhtml/d3416.htm (1 of 7) [12/15/2006 1:13:16 AM]

DIETHYLENETRIAMINE

Flamma's ility Rating: 1 - Slight Reactivity Rating: 2 - Moderate

Contact Rating: 4 - Extreme (Corrosive)

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES

Storage Color Code: White Stripe (Store Separately)

Potential Health Effects

Inhalation:

Inhalation can cause severe irritation of mucous membranes and upper respiratory tract. Symptoms may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. High concentrations may cause lung damage. May cause allergic reaction in sensitive individuals.

Ingestion:

Corrosive. Swallowing can cause severe burns of the mouth, throat, and stomach. Can cause sore throat, vomiting, diarrhea.

Skin Contact:

Corrosive. Symptoms of redness, pain, and severe burn can occur. May be absorbed through the skin with possible systemic effects. May cause allergic reaction in sensitive individuals.

Eye Contact:

Corrosive! Vapors are irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.

Chronic Exposure:

Individuals chronically exposed may become sensitized, with allergic reactions to exposure.

Aggravation of Pre-existing Conditions:

Some individuals may become sensitized. Once acquired, sensitivity may be retained for many years, with possible cross-sensitization to other amines. Persons with pre-existing skin disorders or impaired respiratory function may be more susceptible to the effects of the substance.

4. First Aid Measures

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. CALL A PHYSICIAN IMMEDIATELY.

Ingestion

DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Call a physician immediately.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician, immediately. Wash clothing before reuse.

Eve Contact:

Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Call a physician immediately.

5. Fire Fighting Measures

Fire:

Flash point: 102C (216F) CC

Autoignition temperature: 395C (743F) Flammable limits in air % by volume:

lel: 1.9; uel: 11.6

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DIETHYLENETRIAMINE

Low fire hazard when exposed to heat or flames.

Explosion:

Above flash point, vapor-air mixtures are explosive within flammable limits noted above.

Fire Extinguishing Media:

Water spray, dry chemical, alcohol foam, or carbon dioxide. Direct stream of water can scatter and spread flames. Water spray may be used to keep fire exposed containers cool.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

7. Handling and Storage

Protect against physical damage. Outside or detached storage is preferred. Inside storage should be in a standard flammable liquids storage room or cabinet. Separate from oxidizing materials. Storage and use areas should be No Smoking areas. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

-ACGIH Threshold Limit Value (TLV): 1 ppm (TWA) (skin)

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation*, A Manual of Recommended Practices, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded and engineering controls are not feasible, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134).

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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9. Physical and Chemical Properties

Appearance:

Yellow liquid.

Odor:

Slight ammonia odor.

Solubility:

Completely soluble in water.

Specific Gravity:

0.96 @ 20C/20C

pH:

No information found.

% Volatiles by volume @ 21C (70F):

No information found.

Boiling Point:

207C (405F)

Melting Point:

-39C (-38F)

Vapor Density (Air=1):

3.56

Vapor Pressure (mm Hg):

0.37 @ 20C (68F)

Evaporation Rate (BuAc=1):

No information found.

19. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage. Hygroscopic.

Hazardous Decomposition Products:

May form carbon oxides, nitrogen oxides, hydrocarbons and amine vapors when heated to decomposition.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

This material is a strong alkaline. It reacts with carbon dioxide from the air; reacts violently with strong oxidants, acids, halogens, and reactive organic compounds; is corrosive toward aluminum, zinc, copper and its alloys; and causes spontaneous ignition with cellulose nitrate.

Conditions to Avoid:

Heat, flames, ignition sources and incompatibles.

11. Toxicological Information

Oral rat LD50: 1080 mg/kg; skin rabbit LD50: 1090 mg/kg.

12. Ecological Information

Environmental Fate:

When released into the soil, this material may evaporate to a moderate extent. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is not expected to biodegrade. When released into water, this material is not expected to evaporate significantly. This material has a log octanol-water partition coefficient of less than 3.0. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to have a half-life of less than 1 day.

Environmental Toxicity:

No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: DIETHYLENETRIAMINE

Hazard Class: 8 UN/NA: UN2079 Packing Group: II

Information reported for product/size: 500ML

International (Water, I.M.O.)

Proper Shipping Name: DIETHYLENETRIAMINE

Hazard Class: 8 UN/NA: UN2079 Packing Group: II

Information reported for product/size: 500ML

International (Air, I.C.A.O.)

Proper Shipping Name: DIETHYLENETRIAMINE

Hazard Class: 8 UN/NA: UN2079 Packing Group: II

Information reported for product/size: 500ML

http://www.jtbaker.com/msds/englishhtml/d3416.htm (5 of 7) [12/15/2006 1:13:16 AM]

15. Regulatory Information

\Chemical Inventory Status - Part Ingredient		TSCA	EC	Japan	Australia
Diethylene Triamine (111-40-0)					Yes
\Chemical Inventory Status - Part	2\			 anada	
Ingredient			DSL	NDSL	Phil.
Diethylene Triamine (111-40-0)					Yes
\Federal, State & International Re					
Ingredient					A 313 mical Catg.
Diethylene Triamine (111-40-0)					
\Federal, State & International Re	egulati				
		A	261.3	T 3 8	(d)
Diethylene Triamine (111-40-0)				 N	
emical Weapons Convention: No TSCA 12 ARA 311/312: Acute: Yes Chronic: Yes eactivity: No (Pure / Liquid)					

Australian Hazchem Code: 2X Poison Schedule: None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 3 Flammability: 1 Reactivity: 0

Label Hazard Warning:

DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE ALLERGIC SKIN OR RESPIRATORY REACTION.

Label Precautions:

Do not breathe vapor.

Do not get in eyes, on skin, or on clothing.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

Label First Aid:

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing

http://www.jtbaker.com/msds/englishhtml/d3416.htm (6 of 7) [12/15/2006 1:13:16 AM]

DIETHYLENETRIAMINE

contaminated clothing and shoes. Wash clothing before reuse. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases call a physician immediately.

Product Use:

Laboratory Reagent.

Revision Information:

No Changes. **Disclaimer:**

Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

Prepared by: Environmental Health & Safety Phone Number: (314) 654-1600 (U.S.A.)

MSDS Number: **O8764** * * * * * Effective Date: **05/25/06** * * * * * Supercedes: **01/28/05**



Material Safety Data Sheet

From: Mallinckrodt Baker, Inc. 222 Red School Lane Phillipsburg, NJ 08865





24 Hour Emergency Telephone: 908-859-2151 CHEMTREC: 1-800-424-9300

National Response in Canada CANUTEC: 613-996-6666

Outside U.S. and Canada Chemtrec: 703-527-3887

NOTE: CHEMTREO, CANUTEO and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spit. leak, time, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-682-2537) for assistance.

DIETHYLENE GLYCOL

1. Product Identification

Synonyms: 2,2'-Oxydiethanol; 2,2'-Oxybisethanol; 2,2' Dihydroxydiethyl ether; CELLOSOLVE®; glycol ether;

Glycolethyl ether CAS No.: 111-46-6

Molecular Weight: 106.14 Chemical Formula: C4H10O3

Product Codes: J.T. Baker: S856

Mallinckrodt: 11413, 4911

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			
Diethylene Glycol	111-46-6	99 - 100%	Yes

# 3. Hazards Identification

**Emergency Overview** 

WARNING! HARMFUL IF SWALLOWED. MAY CAUSE IRRITATION TO SKIN AND EYES.

SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

http://www.jtbaker.com/msds/englishhtml/o8764.htm (1 of 6) [12/16/2006 12:38:06 AM]

#### **DIETHYLENE GLYCOL**

Health Rating: 2 - Moderate (Life) Flammability Rating: 1 - Slight Reactivity Rating: 1 - Slight Contact Rating: 1 - Slight

Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES

Storage Color Code: Green (General Storage)

#### **Potential Health Effects**

#### Inhalation:

Low inhalation hazard unless heated because of low vapor pressure.

# Ingestion:

Low acute toxicity. Probable lethal dose to humans is 0.5-5 g/kg. Causes nerve depression, liver and kidney lesions and anuria (urination retardation). Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea.

# Skin Contact:

May be an irritant to skin on prolonged exposure.

### **Eye Contact:**

May be an irritant to eyes and surrounding tissue.

# **Chronic Exposure:**

Liver and kidney lesions and damage.

# Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders or eye problems or impaired liver or kidney function may be more susceptible to the effects of the substance.

# 4. First Aid Measures

#### Inhalation:

Remove to fresh air. Not expected to require first aid measures.

#### Ingestion:

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician.

#### **Skin Contact:**

Remove any contaminated clothing. Wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.

### **Eye Contact:**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Call a physician if irritation persists.

# 5. Fire Fighting Measures

#### Fire:

Flash point: 124C (255F) CC

Autoignition temperature: 229C (444F) Flammable limits in air % by volume:

lel: 1.6; uel: 10.8

Fire is possible at elevated temperatures or by contact with an ignition source.

### **Explosion:**

Above flash point, vapor-air mixtures are explosive within flammable limits noted above.

http://www.itbaker.com/msds/englishhtml/o8764.htm (2 of 6) [12/16/2006 12:38:06 AM]

# Fire Extinguishing Media:

Powder, alcohol foam, water spray or carbon dioxide.

# **Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

# 6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

# 7. Handling and Storage

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

# 8. Exposure Controls/Personal Protection

# Airborne Exposure Limits:

AIHA Workplace Environmental Exposure Level (WEEL): Vapor and Aerosol = 50ppm; Aerosol, only = 10mg/m3.

#### **Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation*, *A Manual of Recommended Practices*, most recent edition, for details.

# Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded, a half-face respirator with an organic vapor cartridge and particulate filter (NIOSH type P95 or R95 filter) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece respirator with an organic vapor cartridge and particulate filter (NIOSH P100 or R100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. Please note that N series filters are not recommended for this material. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

# Skin Protection:

Wear protective gloves and clean body-covering clothing.

# Eye Protection:

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

http://www.jtbaker.com/msds/englishhtml/o8764.htm (3 of 6) [12/16/2006 12:38:06 AM]

# 9. Physical and Chemical Properties

Appearance:

Clear, colorless liquid.

Odor:

Odorless.

Solubility:

Infinitely soluble.

**Specific Gravity:** 

1.118 @ 20C/20C

pH:

No information found.

% Volatiles by volume @ 21C (70F):

100

**Boiling Point:** 

244 - 245C (471 - 473F)

**Melting Point:** 

-6.5C (21F)

Vapor Density (Air=1):

3.66

Vapor Pressure (mm Hg):

1 @ 91.8C (198F)

Evaporation Rate (BuAc=1):

No information found.

# ົງ. Stability and Reactivity

### Stability:

Stable under ordinary conditions of use and storage.

# **Hazardous Decomposition Products:**

Toxic gases and vapors may be released if involved in a fire. Carbon dioxide and carbon monoxide may form when heated to decomposition.

### **Hazardous Polymerization:**

Will not occur.

#### **Incompatibilities:**

Strong oxidizers, strong acids and strong bases.

**Conditions to Avoid:** 

Incompatibles.

# 11. Toxicological Information

Oral rat LD50: 12565 mg/kg. Skin rabbit LD50: 11.89 g/kg Irritation: eye rabbit, standard Draize: 50 mg mild. Investigated as a tumorigen and reproductive effector.

http://www.jtbaker.com/msds/englishhtml/o8764.htm (4 of 6) [12/16/2006 12:38:06 AM]

# 12. Ecological Information

Environmental Fate: No information found. Environmental Toxicity: No information found.

# 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

# 14. Transport Information

Not regulated.

# 15. Regulatory Information

\Chemical Inventory Status - P Ingredient		TSCA	EC	Japan	Australia
Diethylene Glycol (111-46-6)					Yes
\Chemical Inventory Status - P	art 2\				
Ingredient			DSL		Phil.
Diethylene Glycol (111-46-6)		Yes		No	
\Federal, State & Internationa					
Ingredient	RQ	TPQ	Li	st Che	A 313 mical Catg
Diethylene Glycol (111-46-6)					col ether
\Federal, State & Internationa	l Regulati				
Ingredient		A	261.3	T 3 8	(d)
Diethylene Glycol (111-46-6)				 N	
Chemical Weapons Convention: No TSC RA 311/312: Acute: Yes Chronic: Reactivity: No (Pure / Liquid)					

http://www.jtbaker.com/msds/englishhtml/o8764.htm (5 of 6) [12/16/2006 12:38:06 AM]

Australian Hazchem Code: None allocated.

**Poison Schedule:** None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and

the MSDS contains all of the information required by the CPR.

# 16. Other Information

NFPA Ratings: Health: 1 Flammability: 1 Reactivity: 0

Label Hazard Warning:

WARNING! HARMFUL IF SWALLOWED. MAY CAUSE IRRITATION TO SKIN AND EYES.

Label Precautions:

Wash thoroughly after handling.

Avoid contact with eyes, skin and clothing.

Label First Aid:

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician. In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. Call a physician if irritation develops or persists.

**Product Use:** 

Laboratory Reagent.

**Revision Information:** 

MSDS Section(s) changed since last revision of document include: 9.

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Prepared by: Environmental Health & Safety Phone Number: (314) 654-1600 (U.S.A.)



Revision date: 2006/04/10

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Version: 1.0

(30036696/MDS_GEN_US/EN)

# 1. Substance/preparation and company identification

Company BASF CORPORATION 100 Campus Drive Florham Park, NJ 07932 24 Hour Emergency Response Information

CHEMTREC: (800) 424-9300 BASF HOTLINE: (800) 832-HELP

Molecular formula: Chemical family: C(5)H(10)O ketones Diethylketone

Synonyms:

# 2. Composition/information on ingredients

CAS Number 96-22-0 Content (W/W)

Chemical name pentan-3-one

#### 3. Hazard identification

#### **Emergency overview**

DANGER: FLAMMABLE LIQUID. MAY BE HARMFUL IF SWALLOWED.

MAY BE HARMFUL IF INHALED.

MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.

INGESTION MAY CAUSE GASTRIC DISTURBANCES.

Avoid contact with the skin, eyes and clothing.

Avoid inhalation of mists/vapours.

Use with local exhaust ventilation.

Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator.

Wear NIOSH-certified chemical goggles.

Wear chemical resistant protective gloves.

Wear protective clothing.

Eye wash fountains and safety showers must be easily accessible.

### Potential health effects

# Primary routes of exposure

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases.

#### Irritation

Irritating to respiratory system. Repeated exposure may cause skin dryness or cracking.

#### Sensitization:

The substance did not cause skin sensitization in humans.

#### Medical conditions aggravated by overexposure:

Data available do not indicate that there are medical conditions that are generally recognized as being aggravated by exposure to this substance/product.

See MSDS section 11 - Toxicological information.



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(30036696/MDS_GEN_US/EN)

#### Potential environmental effects

#### Aquatic toxicity:

The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

### 4. First-aid measures

#### General advice:

Remove contaminated clothing.

#### If inhaled

Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary. Immediate medical attention required.

#### If on skin:

Wash affected areas thoroughly with soap and water. Remove contaminated clothing. Wash soiled clothing immediately. If irritation develops, seek medical attention.

#### If in eves:

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. If irritation develops, seek medical attention.

#### If swallowed:

Rinse mouth and then drink plenty of water. Induce vomiting. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.

# 5. Fire-fighting measures

Flash point: Autoignition: 7 °C

(DIN 51755)

Lower explosion limit:

425 °C 1.6 %(V)

Upper explosion limit:

(DIN 51794)

7.7 %(V)

#### Suitable extinguishing media:

water fog, foam, dry extinguishing media

#### Unsuitable extinguishing media for safety reasons:

water

### Hazards during fire-fighting:

No particular hazards known.

### Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

#### Further information:

If exposed to fire, keep containers cool by spraying with water.

#### NFPA Hazard codes:

Health: 1

Fire: 3

Reactivity: 0

Special:



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(30036696/MDS_GEN_US/EN)

#### Accidental release measures

#### Personal precautions:

Breathing protection required.

#### **Environmental precautions:**

Substance/product is RCRA hazardous due to its properties.

#### Cleanup:

Spills should be contained, solidified, and placed in suitable containers for disposal.

# 7. Handling and storage

#### Handling

#### General advice:

See MSDS section 10 - Stability and reactivity. See MSDS section 5 - Fire fighting measures.

#### Protection against fire and explosion:

See MSDS section 5 - Fire fighting measures.

### <u>Storage</u>

#### General advice:

Keep container tightly closed in a cool, well-ventilated place. Avoid extreme heat. Keep away from sources of ignition - No smoking.

# Storage stability:

Storage temperature: 20 °C Storage duration: 24 Months

### 8. Exposure controls and personal protection

#### Components with workplace control parameters

pentan-3-one

**ACGIH** 

TWA value 200 ppm; STEL value 300 ppm;

# Advice on system design:

Provide local exhaust ventilation to control vapours/mists.

#### Personal protective equipment

#### Respiratory protection:

Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator. Do not exceed the maximum use concentration for the respirator facepiece/cartridge combination. For emergency or non-routine, high exposure situations, use a NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions. Observe OSHA regulations for respirator use (29 CFR 1910.134).



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(30036696/MDS_GEN_US/EN)

Hand protection:

Chemical resistant protective gloves, Consult with glove manufacturer for testing data.

Eye protection:

Tightly fitting safety goggles (chemical goggles).

General safety and hygiene measures:

Eye wash fountains and safety showers must be easily accessible. Wear protective clothing as necessary to prevent contact.

# 9. Physical and chemical properties

Odour:

ketone-like

Colour:

colourless to yellow

pH value:

approx. 6

Melting point:

-39 °C

101 - 102 °C

Boiling point: Vapour pressure:

37.6 mbar

(20°C)

Density:

0.815 g/cm3

(20°C)

(50 g/ml)

Partitioning coefficient n-

0.85

(20 °C) slightly soluble

octanol/water (log Pow):

Solubility in water: Solubility (qualitative):

miscible

solvent(s): organic solvents,

# 10. Stability and reactivity

### Substances to avoid:

No data available.

#### Hazardous reactions:

The product is chemically stable.

#### Corrosion to metals:

No corrosive effect on metal.

# 11. Toxicological information

### **Acute toxicity**

# Oral:

LD50/rat: approx. 2,900 mg/kg

Moderately toxic.

#### Inhalation:

Inhalation-risk test (IRT): No mortality within 10 minutes as shown in animal studies. Deaths possible with prolonged exposure.

#### Dermal:

LD50/rabbit: 16,200 mg/kg



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(30036696/MDS_GEN_US/EN)

Skin irritation:

rabbit: non-irritant (BASF-Test)

Eye irritation:

rabbit: Nonirritating.

Sensitization:

No sensitizing effect.

# 12. Ecological information

#### **Environmental fate and transport**

**Biodegradation:** 

Test method:

APHA 'Standard Methods', No. 219, 1971, municipal sewage treatment plant

effl.

Method of analysis:

Degree of elimination:

75 % (5 d)

Evaluation:

Readily biodegradable (according to OECD criteria).

Literature data.

BOD of the ThOD

# Bioaccumulation:

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Chemical oxygen demand (COD):

2,246 mg/g

Biochemical oxygen demand (BOD):

Incubation period 5 d: 1,310 mg/g

### **Environmental toxicity**

Acute and prolonged toxicity to fish:

Fathead minnow/LC50 (96 h): 1,540 mg/l

The statement of the toxic effect relates to the analytically determined concentration. Literature data.

Acute toxicity to aquatic invertebrates:

Directive 79/831/EEC Daphnia magna/EC50 (48 h): > 500 mg/l

Nominal concentration.

Toxicity to aquatic plants:

DIN 38412 Part 9 green algae/EC50 (72 h): > 500 mg/l

Nominal concentration.

Toxicity to microorganisms:

DIN 38412 Part 8 bacterium/EC50 (17 h): > 10,000 mg/l

Nominal concentration.



Revision date: 2006/04/10

Page: 6/7

Version: 1.0

(30036696/MDS_GEN_US/EN)

# 13. Disposal considerations

Waste disposal of substance:

Dispose of in a RCRA-licensed facility.

Do not discharge into waterways or sewer systems without proper authorization.

Dispose of in accordance with national, state and local regulations.

Container disposal:

Empty containers with less than 1 inch of residue may be landfilled at a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers. If containers are not empty, they must be disposed of in a RCRA-licensed facility.

RCRA:

D001

# 14. Transport information

Land transport

USDOT

Proper shipping name:

DIETHYL KETONE

Hazard class:

3

ID-number:

Packing group:

UN 1156

Sea transport

**IMDG** 

Proper shipping name:

DIETHYL KETONE

Hazard class:

3

ID-number:

**UN 1156** 

Packing group: Marine pollutant:

NO

Air transport

IATA/ICAO

Proper shipping name:

**DIETHYL KETONE** 

Hazard class:

<u>ئ</u>

ID-number: Packing group: UN 1156

# 15. Regulatory information

Federal Regulations



Revision date: 2006/04/10

Page: 7/7

Version: 1.0

(30036696/MDS GEN US/EN)

Registration status:

TSCA, US

released / listed

OSHA hazard category:

Flammable Liquid

ACGIH TLV established, Skin and/or eye irritant, OSHA PEL established,

SARA hazard categories (EPCRA 311/312): Fire, Acute

State regulations

State RTK

CAS Number 96-22-0 Chemical name

pentan-3-one

State RTK MA, NJ, PA

16. Other information

HMIS III rating

Health: 1

Flammability: 3

Physical hazard: 0

HMIS uses a numbering scale ranging from 0 to 4 to indicate the degree of hazard. A value of zero means that the substance possesses essentially no hazard; a rating of four indicates high hazard.

Local contact information prod_reg@basf.com

IMPORTANT: WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE, IT IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE. WE RECOMMEND THAT YOU MAKE TESTS TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, INFORMATION, DATA OR DESIGNS PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. FURTHER, YOU EXPRESSLY UNDERSTAND AND AGREE THAT THE DESCRIPTIONS, DESIGNS, DATA, AND INFORMATION FURNISHED BY BASE HEREUNDER ARE GIVEN GRATIS AND BASF ASSUMES NO OBLIGATION OR LIABILITY FOR THE DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK. END OF DATA SHEET



# **Material Safety Data Sheet**

The Dow Chemical Company

Product Name: Diethanolamine

Issue Date: 09/15/2006 Print Date: 31 Jul 2007

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

# 1. Product and Company Identification

#### **Product Name**

Diethanolamine

#### **COMPANY IDENTIFICATION**

The Dow Chemical Company 2030 Willard H. Dow Center Midland, MI 48674 USA

**Customer Information Number:** 

800-258-2436

#### **EMERGENCY TELEPHONE NUMBER**

24-Hour Emergency Contact: Local Emergency Contact:

989-636-4400

989-636-4400

# 2. Hazards Identification

**Emergency Overview** 

Color: Colorless above freezing point
Physical State: Liquid above freezing point

Odor: Ammoniacal Hazards of product:

WARNING! Causes eye irritation. May cause skin irritation. May be harmful if

swallowed.

#### **OSHA Hazard Communication Standard**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

# Potential Health Effects

Eye Contact: May cause severe eye irritation. May cause severe corneal injury.

**Skin Contact:** Prolonged contact may cause skin irritation with local redness. Repeated contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage. May cause more severe response if skin is abraded (scratched or cut). Not classified as corrosive to the skin according to DOT guidelines.

Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

* Indicates a	ı Trademark
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Page 1 of 8

Inhalation: At room temperature, exposure to vapor is minimal due to low volatility. Vapor from heated material may cause respiratory irritation and other effects.

Ingestion: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Swallowing may result in gastrointestinal irritation or ulceration.

Effects of Repeated Exposure: Results from repeated exposure tests on diethanolamine in laboratory animals include anemia (rats) and effects on kidney (rats and mice) and liver (mice). Heart and nervous system effects were also observed in animals given exaggerated doses of diethanolamine. Changes in other organs, causes of which are nonspecific, were judged secondary to the poor health of the animals due to the extremely high doses of diethanolamine given.

Cancer Information: Findings from a chronic diethanolamine skin painting study by NTP include liver

Cancer Information: Findings from a chronic diethanolamine skin painting study by NTP include liver and kidney tumors in mice; no tumors were observed in rats. Mechanistic studies indicate that tumor formation is of questionable relevance to humans.

Birth Defects/Developmental Effects: Has been toxic to the fetus in lab animals at doses toxic to the mother.

# 3. Composition Information

Component	CAS#	Amount
N,N-Diethanolamine	111-42-2	> 99.2 %

# 4. First-aid measures

**Eye Contact:** Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

Skin Contact: Wash skin with plenty of water.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

**Ingestion:** Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth to an unconscious person.

Notes to Physician: Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

# 5. Fire Fighting Measures

**Extinguishing Media:** Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Do not use direct water stream. May spread fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers,

Page 2 of 8

boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.

# 6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Small spills: Absorb with materials such as: Non-combustible material. Sand. Clay. Vermiculite. Zorb-all®, Collect in suitable and properly labeled containers. Do NOT use absorbent materials such as: Cellulose. Sawdust. Large spills: Contain spilled material if possible. Pump into suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

Personal Precautions: Isolate area. Refer to Section 7, Handling, for additional precautionary measures. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

# 7. Handling and Storage

Handling

General Handling: Avoid contact with eyes. Avoid contact with skin and clothing. Do not swallow. Wash thoroughly after handling. Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines could be formed. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

#### Storage

Store in a dry place. Avoid moisture. Do not store in: Aluminum. Copper. Copper alloys. Avoid freezing.

Storage Period:

Storage temperature:

34 - 49 ℃

Bulk

6 Months

Metal drums.

24 Months

# 8. Exposure Controls / Personal Protection

# Exposure Limits Component List Type Value N,N-Diethanolamine ACGIH TWA 2 mg/m3 SKIN

A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.

It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

#### **Personal Protection**

Page 3 of 8

Eye/Face Protection: Use chemical goggles.

Skin Protection: When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. Selection of specific items such as faceshield, boots, apron, or full-body suit will depend on the task. If hands are cut or scratched, use gloves chemically resistant to

this material even for brief exposures.

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. For most conditions, no respiratory protection should be needed; however, if handling at elevated temperatures without sufficient ventilation, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

**Engineering Controls** 

Ventilation: Provide general and/or local exhaust ventilation to control airborne levels below the exposure quidelines.

#### 9. **Physical and Chemical Properties**

**Physical State** 

Color

Odor

Flash Point - Closed Cup Flammable Limits In Air

**Autoignition Temperature** 

**Vapor Pressure** 

**Boiling Point (760 mmHg)** Vapor Density (air = 1)

Specific Gravity (H2O = 1) **Freezing Point** 

**Melting Point** Solubility in Water (by

weight)

На

**Octanol/Water Partition** 

Coefficient

**Dynamic Viscosity Kinematic Viscosity**  Liquid above freezing point Colorless above freezing point

Ammoniacal

191 °C (376 °F) Pensky-Martens Closed Cup ASTM D 93

Lower: 1.5 %(V) Literature Upper: No test data available 395 °C (743 °F) Literature < 0.01 mmHg @ 20 °C Literature

268 °C (514 °F) Estimated Decomposes.

3.6 Literature

1.092 30 °C/20 °C Literature 28.0 °C (82.4 °F) Literature Not applicable to liquids 100 % @ 20 °C Literature

11.5 (10% aqueous solution)

-2.18 Shake flask (OECD 107 Test)

380 cps @ 30 °C Literature No test data available

#### 10. Stability and Reactivity

### Stability/Instability

Stable under recommended storage conditions. See Storage, Section 7. Hygroscopic. Conditions to Avoid: Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Avoid moisture.

Page 4 of 8

Incompatible Materials: Avoid contact with: Nitrites. Strong acids. Strong oxidizers. Product may potentially react with various halogenated organic solvents, resulting in temperature and/or pressure increases Corrosive when wet. Heating above 60°C in the presence of aluminum can result in corrosion and generation of flammable hydrogen gas. Avoid unintended contact with: Halogenated hydrocarbons.

### **Hazardous Polymerization**

Will not occur.

#### **Thermal Decomposition**

Decomposition products depend upon temperature, air supply and the presence of other materials.

# 11. Toxicological Information

### **Acute Toxicity**

Ingestion

LD50, Rat, female 680 - 1,100 mg/kg

**Skin Absorption** 

LD50, Rabbit > 8,200 mg/kg

### **Repeated Dose Toxicity**

Results from repeated exposure tests on diethanolamine in laboratory animals include anemia (rats) and effects on kidney (rats and mice) and liver (mice). Heart and nervous system effects were also observed in animals given exaggerated doses of diethanolamine. Changes in other organs, causes of which are nonspecific, were judged secondary to the poor health of the animals due to the extremely high doses of diethanolamine given.

### Chronic Toxicity and Carcinogenicity

Findings from a chronic diethanolamine skin painting study by NTP include liver and kidney tumors in mice; no tumors were observed in rats. Mechanistic studies indicate that tumor formation is of questionable relevance to humans. A number of factors may have influenced the results and are being considered in their interpretation.

### **Developmental Toxicity**

Has been toxic to the fetus in lab animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

#### **Genetic Toxicology**

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

# 12. Ecological Information

#### **CHEMICAL FATE**

**Movement & Partitioning** 

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Henry's Law Constant (H): 5.35E-14 atm*m3/mole; 25 °C Measured

Partition coefficient, n-octanol/water (log Pow): -2.18 Shake flask (OECD 107 Test)

Partition coefficient, soil organic carbon/water (Koc): 1 Estimated

#### Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability). Indirect Photodegradation with OH Radicals

Pete Constant Atmospheric Helf-life

Hate Constant	Atmospheric Hait-life	wethod
8.90E-11 cm3/s	0.167 d	Estimated

OECD Biodegradation Tests:

Page 5 of 8

	Biodegradation	Exposure Time	Method
I	100 %	19 d	OECD 301E Test
ł	94 %	14 d	OECD 302B Test

Biological oxygen demand (BOD):

BOD 5	BOD 10	BOD 20	BOD 28
10.3 %	34.7 %	56.3 %	

Chemical Oxygen Demand: 1.33 mg/mg
Theoretical Oxygen Demand: 2.13 mg/mg

**ECOTOXICITY** 

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in most sensitive species tested). May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms.

Fish Acute & Prolonged Toxicity

LC50, bluegill (Lepomis macrochirus), static: 1,850 - 2,100 mg/l

**Aquatic Invertebrate Acute Toxicity** 

LC50, water flea Daphnia magna, 48 h: 122 mg/l

**Aquatic Plant Toxicity** 

EC50, green alga Selenastrum capricornutum, biomass growth inhibition, 96 h: 3.3 - 3.6 mg/l

Toxicity to Micro-organisms

EC50, OECD 209 Test; activated sludge, respiration inhibition, 3 h: > 1,000 mg/l

# 13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. DOW HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Group at 1-800-258-2436 or 1-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details.

# 14. Transport Information

**DOT Non-Bulk** 

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, NOS

**Technical Name: CONTAINS DIETHANOLAMINE** 

Hazard Class: 9 ID Number: UN3082 Packing Group: PG III

**DOT Bulk** 

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, NOS

Technical Name: CONTAINS DIETHANOLAMINE

Hazard Class: 9 ID Number: UN3082 Packing Group: PG III

**IMDG** 

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, NOS

Technical Name: CONTAINS DIETHANOLAMINE

Hazard Class: 9 ID Number: UN3082 Packing Group: PG III

EMS Number: F-A,S-F Marine pollutant.: No

Page 6 of 8

ICAO/IATA

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Technical Name: CONTAINS DIETHANOLAMINE

Hazard Class: 9 ID Number: UN3082 Packing Group: PG ill

#### **Additional Information**

Reportable quantity: 101 lb - DIETHANOLAMINE

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

# 15. Regulatory Information

#### **OSHA Hazard Communication Standard**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

# Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	Yes
Delayed (Chronic) Health Hazard	No
Fire Hazard	No
Reactive Hazard	. No
Sudden Release of Pressure Hazard	No

# Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Component	CAS#	Amount
N,N-Diethanolamine	111-42-2	> 99.2 %

# Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	 CAS#	Amount
N,N-Diethanolamine	 111-42-2	> 99.2 %

# Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

# California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

#### **US. Toxic Substances Control Act**

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

**CEPA - Domestic Substances List (DSL)** 

Page 7 of 8

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

# 16. Other Information

#### **Product Literature**

Additional information on this product may be obtained by calling your Dow Chemical Company sales or customer service contact. Ask for a product brochure. Additional information on this and other Dow products may be obtained by visiting our web page at www.dow.com.

**Hazard Rating System** 

NFPA

Health

Fire

Reactivity

0

## **Recommended Uses and Restrictions**

Chemical intermediate.

#### Revision

Identification Number: 78279 / 1001 / Issue Date 09/15/2006 / Version: 3.0 Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for
	activities such as exposure monitoring and medical surveillance if exceeded.

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

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# HALLIBURTON

# **MATERIAL SAFETY DATA SHEET**

**Product Trade Name:** 

**DIESEL FUEL** 

**Revision Date:** 

02-Jan-2007

# 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Trade Name:** 

DIESEL FUEL

Synonyms:

None

Chemical Family:

Organic hydrocarbon

Application:

Fue

Manufacturer/Supplier

Halliburton Energy Services

P.O. Box 1431

Duncan, Oklahoma 73536-0431

Emergency Telephone: (281) 575-5000

**Prepared By** 

Chemical Compliance

Telephone: 1-580-251-4335

# 2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	<b>ACGIH TLV-TWA</b>	OSHA PEL-TWA
Diesel	68476-34-6	60 - 100%	Not applicable	Not applicable

# 3. HAZARDS IDENTIFICATION

**Hazard Overview** 

May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and

other central nervous system effects. May be harmful if swallowed. Potential

carcinogen. Combustible.

# 4. FIRST AID MEASURES

Inhalation

If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably

mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Skin

In case of contact, immediately flush skin with plenty of soap and water for at least 15

minutes. Get medical attention. Remove contaminated clothing and launder before

reuse.

Eyes

In case of contact, or suspected contact, immediately flush eyes with plenty of water

for at least 15 minutes and get medical attention immediately after flushing.

Ingestion

Get medical attention! If vomiting occurs, keep head lower than hips to prevent

aspiration.

Notes to Physician

Not Applicable

DIESEL FUEL Page 1 of 6

# FIRE FIGHTING MEASURES

Flash Point/Range (F):

Not DeterminedMin: > 150 Not DeterminedMin: > 65

Flash Point/Range (C):

Flash Point Method:

Not Determined

Autoignition Temperature (F): Autoignition Temperature (C): 495 257

Flammability Limits in Air - Lower (%):

Flammability Limits in Air - Upper (%):

0.7

Fire Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

**Special Exposure Hazards** 

Use water spray to cool fire exposed surfaces. Closed containers may explode in

fire. Decomposition in fire may produce toxic gases.

Fire-Fighters

Special Protective Equipment for Full protective clothing and approved self-contained breathing apparatus required for

fire fighting personnel.

**NFPA Ratings: HMIS Ratings:** 

Health 1, Flammability 2, Reactivity 0

Flammability 2, Reactivity 0, Health 1

# **ACCIDENTAL RELEASE MEASURES**

Personal Precautionary Measures Use appropriate protective equipment. Wear self-contained breathing apparatus in

enclosed areas.

**Environmental Precautionary** 

Measures

Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning /

Absorption

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials.

Scoop up and remove.

# HANDLING AND STORAGE

**Handling Precautions** 

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after

use. Launder contaminated clothing before reuse.

Storage Information

Store away from oxidizers. Keep from heat, sparks, and open flames. Keep container

closed when not in use.

# **EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Engineering Controls** 

Use in a well ventilated area. Local exhaust ventilation should be used in areas

without good cross ventilation.

**Respiratory Protection** 

Organic vapor respirator.

**Hand Protection** 

Impervious rubber gloves.

**Skin Protection** 

Rubber apron.

**Eye Protection** 

Chemical goggles; also wear a face shield if splashing hazard exists.

**Other Precautions** 

Eyewash fountains and safety showers must be easily accessible.

### PHYSICAL AND CHEMICAL PROPERTIES

**Physical State:** 

Color:

Liquid

Clear colorless

DIESEL FUEL Page 2 of 6

9. PHYSICAL AND CHEMICAL PROPERTIES

Odor:

Diesel

pH:

Not Determined

Specific Gravity @ 20 C (Water=1):

0.84

Density @ 20 C (lbs./gallon): Bulk Density @ 20 C (lbs/ft3): 7.0 Not Determined

Bulk Density @ 20 C (lbs/ft3): Boiling Point/Range (F):

300

Boiling Point/Range (C): Freezing Point/Range (F):

148

Freezing Point/Range (C):

Not Determined Not Determined

Vapor Pressure @ 20 C (mmHg):

1

Vapor Density (Air=1):

Not Determined

Percent Volatiles:

100

Evaporation Rate (Butyl Acetate=1):

Not Determined

Solubility in Water (g/100ml):

Insoluble

Solubility in Solvents (g/100ml):

Insoluble
Not Determined

VOCs (lbs./gallon): Viscosity, Dynamic @ 20 C (centipoise): Not Determined

Viscosity, Bynamic @ 20 C (centipoise):

Not Determined 2.0-5.8

Partition Coefficient/n-Octanol/Water:

Not Determined

Molecular Weight (g/mole):

Not Determined

# 10. STABILITY AND REACTIVITY

Stability Data:

Stable

Hazardous Polymerization:

Will Not Occur

Conditions to Avoid

Keep away from heat, sparks and flame.

Incompatibility (Materials to

Avoid)

Strong oxidizers.

Hazardous Decomposition

Products

Carbon monoxide and carbon dioxide.

Additional Guidelines

Not Applicable

# 11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure

Eye or skin contact, inhalation.

Inhalation

May cause respiratory irritation.

May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and

unconsciousness.

Skin Contact

May cause skin defatting with prolonged exposure. May cause skin irritation.

Eye Contact

May cause eye irritation.

Ingestion

Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.

Aggravated Medical Conditions

Skin disorders.

Chronic Effects/Carcinogenicity

Contains petroleum distillates which have been shown to cause skin cancer in

laboratory animals.

Other In formation

None known.

DIESEL FUEL Page 3 of 6

## **Toxicity Tests**

**Oral Toxicity:** 

Not determined

**Dermal Toxicity:** 

Not determined

**Inhalation Toxicity:** 

Not determined

**Primary Irritation Effect:** 

Not determined

Carcinogenicity

Not determined

Genotoxicity:

Not determined

Reproductive /

**Developmental Toxicity:** 

Not determined

# **ECOLOGICAL INFORMATION**

Mobility (Water/Soil/Air)

Not determined

Persistence/Degradability

Slowly biodegradable

Bio-accumulation

Not Determined

# **Ecotoxicological Information**

**Acute Fish Toxicity:** 

Not determined

Acute Crustaceans Toxicity: Not determined

**Acute Algae Toxicity:** 

Not determined

**Chemical Fate Information** 

Not determined

Other Information

Not applicable

# **DISPOSAL CONSIDERATIONS**

**Disposal Method** 

Disposal should be made in accordance with federal, state, and local regulations.

**Contaminated Packaging** 

Follow all applicable national or local regulations.

# TRANSPORT INFORMATION

### **Land Transportation**

### DOT

Not restricted except for ADR

#### DOT (Bulk)

Diesel Fuel, Combustible Liquid, NA1993, III

### Canadian TDG

Not restricted except for ADR

# **ADR**

UN1202, Diesel, 3, III

Not restricted except for ADR

DIESEL FUEL Page 4 of 6

### Air Transportation

ICAO/IATA

UN1202, Diesel, 3, III Not restricted except for ADR

# **Sea Transportation**

**IMDG** 

UN1202, Diesel, 3, III Not restricted except for ADR

# Other Shipping Information

Labels:

Combustible

# 15. REGULATORY INFORMATION

**US Regulations** 

**US TSCA Inventory** 

All components listed on inventory.

EPA SARA Title III Extremely Hazardous Substances

Not applicable

EPA SARA (311,312) Hazard

Class

Acute Health Hazard Chronic Health Hazard

Fire Hazard

Not applicable.

**EPA SARA (313) Chemicals** 

This product does not contain a toxic chemical for routine annual "Toxic Chemical

Release Reporting" under Section 313 (40 CFR 372).

**EPA CERCLA/Superfund** 

Reportable Spill Quantity For This

Product

**EPA RCRA Hazardous Waste** 

Classification

If product becomes a waste, it does NOT meet the criteria of a hazardous waste as

defined by the US EPA.

**California Proposition 65** 

All components listed do not apply to the California Proposition 65 Regulation.

MA Right-to-Know Law

Does not apply.

NJ Right-to-Know Law

Does not apply.

PA Right-to-Know Law

Does not apply.

**Canadian Regulations** 

**Canadian DSL Inventory** 

All components listed on inventory.

WHMIS Hazard Class

B3 Combustible Liquids

# 16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS Not applicable

DIESEL FUEL Page 5 of 6

### **Additional Information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

### **Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

***END OF MSDS***

DIESEL FUEL Page 6 of 6

# HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** 

DETERGENT

**Revision Date:** 

06-Jan-2005

# 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Trade Name:** 

DETERGENT

Synonyms:

None

**Chemical Family:** 

Anionic and Nonionic Surfactant

Application:

Anionic Surfactant

Manufacturer/Supplier

Baroid Drilling Fluids

a Product Service Line of Halliburton Energy Services, Inc.

P.O. Box 1675 Houston, TX 77251

Telephone: (281) 871-4000

Emergency Telephone: (281) 575-5000

**Prepared By** 

Chemical Compliance

Telephone: 1-580-251-4335

# 2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	<b>ACGIH TLV-TWA</b>	OSHA PEL-TWA
Contains no hazardous	Mixture	60 - 100%	Not applicable	Not applicable
substances	1			

# 3. HAZARDS IDENTIFICATION

**Hazard Overview** 

May cause eye and skin irritation.

# 4. FIRST AID MEASURES

Inhalation

If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation

develops or if breathing becomes difficult.

Skin

Wash with soap and water.

Eyes

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes

and get medical attention if irritation persists.

Ingestion

Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek

medical attention. Never give anything by mouth to an unconscious person.

**Notes to Physician** 

Not Applicable

DETERGENT Page 1 of 5

# FIRE FIGHTING MEASURES

Flash Point/Range (F):

Flash Point/Range (C):

Flash Point Method:

Autoignition Temperature (F): **Autoignition Temperature (C):** 

Flammability Limits in Air - Lower (%): Flammability Limits in Air - Upper (%):

> 210

> 99 **PMCC** 

Not Determined

Not Determined Not Determined

Not Determined

Fire Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

**Special Exposure Hazards** 

Decomposition in fire may produce toxic gases.

Fire-Fighters

Special Protective Equipment for Full protective clothing and approved self-contained breathing apparatus required for

fire fighting personnel.

NFPA Ratings:

Health 1, Flammability 0, Reactivity 0

**HMIS Ratings:** 

Flammability 0, Reactivity 0, Health 1

# **ACCIDENTAL RELEASE MEASURES**

Personal Precautionary Measures Use appropriate protective equipment.

**Environmental Precautionary** 

Measures

Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning /

Absorption

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials.

Scoop up and remove.

### HANDLING AND STORAGE

**Handling Precautions** 

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors.

Storage Information

Keep container closed when not in use. Product has a shelf life of 36 months.

# **EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Engineering Controls** 

Use in a well ventilated area.

**Respiratory Protection** 

Not normally needed. But if significant exposures are possible then the following

respirator is recommended:

Organic vapor respirator.

**Hand Protection** 

Impervious rubber gloves.

**Skin Protection** 

Normal work coveralls.

**Eye Protection** 

Wear safety glasses or goggles to protect against exposure.

Other Precautions

None known.

# PHYSICAL AND CHEMICAL PROPERTIES

**Physical State:** 

Color: Odor:

pH:

Specific Gravity @ 20 C (Water=1):

Liquid

Red Pleasant

1.01

DETERGENT

Page 2 of 5

Density @ 20 C (lbs./gallon):

Bulk Density @ 20 C (lbs/ft3):

Boiling Point/Range (F):

Boiling Point/Range (C):

Freezing Point/Range (F):

Freezing Point/Range (C):

-1.11

Vapor Pressure @ 20 C (mmHg):Not DeterminedVapor Density (Air=1):Not Determined

Percent Volatiles:

Evaporation Rate (Butyl Acetate=1): Not Determined

Solubility in Water (g/100ml): Miscible

Solubility in Solvents (g/100ml): Not Determined

VOCs (Ibs./gallon):

Viscosity, Dynamic @ 20 C (centipoise):

Not Determined

Not Determined

Viscosity, Kinematic @ 20 C (centistrokes):

Not Determined
Partition Coefficient/n-Octanol/Water:

Not Determined

Molecular Weight (g/mole): Not Determined

# 10. STABILITY AND REACTIVITY

Stability Data: Stable

Hazardous Polymerization: Will Not Occur

Conditions to Avoid None anticipated

Incompatibility (Materials to

Avoid)

Strong oxidizers.

**Hazardous Decomposition** 

**Products** 

Carbon monoxide and carbon dioxide.

Additional Guidelines

Not Applicable

# 11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure Eye or skin contact, inhalation.

Inhalation May cause central nervous system depression including headache, dizziness,

drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and

unconsciousness.

Skin Contact Causes drying of the skin. May cause mild skin irritation.

Eye Contact May cause mild eye irritation.

Ingestion May cause abdominal pain, vomiting, nausea, and diarrhea.

Aggravated Medical Conditions None known.

Chronic Effects/Carcinogenicity - No data available to indicate product or components present at greater than 1% are

chronic health hazards.

Other Information None known.

**Toxicity Tests** 

Oral Toxicity: Not determined

Dermal Toxicity: Not determined

Inhalation Toxicity: Not determined

-

DETERGENT Page 3 of 5 **Primary Irritation Effect:** 

Not determined

Carcinogenicity

Not determined

Genotoxicity:

Not determined

Reproductive /

Not determined

**Developmental Toxicity:** 

# 12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)

Not determined

Persistence/Degradability

Not determined

**Bio-accumulation** 

Not Determined

# **Ecotoxicological Information**

**Acute Fish Toxicity:** 

Not determined

Acute Crustaceans Toxicity: Not determined **Acute Algae Toxicity:** 

Not determined

**Chemical Fate Information** 

Not determined

Other Information

Not applicable

# 13. DISPOSAL CONSIDERATIONS

**Disposal Method** 

Disposal should be made in accordance with federal, state, and local regulations.

**Contaminated Packaging** 

If empty container retains product residues, all label precautions must be observed.

Transport with all closures in place. Return for reuse or disposal according to

national or local regulations.

# TRANSPORT INFORMATION

# **Land Transportation**

DOT

Not restricted

Canadian TDG

Not restricted

**ADR** Not restricted

Air Transportation

ICAO/IATA Not restricted

Sea Transportation

IMDG

Not restricted

Other Shipping Information

DETERGENT Page 4 of 5

Labels:

None

# 15. REGULATORY INFORMATION

# **US Regulations**

**US TSCA Inventory** 

All components listed on inventory.

EPA SARA Title III Extremely Hazardous Substances

Not applicable

EPA SARA (311,312) Hazard

Class

Acute Health Hazard

EPA SARA (313) Chemicals

This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).

EPA CERCLA/Superfund

Not applicable.

Reportable Spill Quantity For This

**Product** 

**EPA RCRA Hazardous Waste** 

Classification

If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.

California Proposition 65

All components listed do not apply to the California Proposition 65 Regulation.

MA Right-to-Know Law

One or more components listed.

NJ Right-to-Know Law

One or more components listed.

PA Right-to-Know Law

One or more components listed.

**Canadian Regulations** 

Canadian DSL Inventory

All components listed on inventory.

**WHMIS Hazard Class** 

D2B Toxic Materials

# 16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS Not applicable

**Additional Information** 

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

**Disclaimer Statement** 

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

***END OF MSDS***

DETERGENT Page 5 of 5

# MATERIAL SAFETY DATA SHEET

SHELL MSDS: 830555-1 10/06/00

### **DEMINERALIZED WATER**

TELEPHONE NUMBER:

24 HOUR EMERGENCY ASSISTANCE

CHEMTREC: 800-424-9300

GENERAL MSDS ASSISTANCE

SHELL: 713-241-4819

COMPANY NAME AND ADDRESS

SHELL CHEMICAL COMPANY

P.O. BOX 4320

HOUSTON, TX

77210-4320 USA

SECTION I ___NAME

PRODUCT:

DEMINERALIZED WATER

CHEM NAME:

CHEM FAMILY: NONE SHELL CODE: SSSSS

HEALTH HAZARD: 3

FIRE HAZARD: 0

REACTIVITY: 0

SECTION II-A INGREDIENTS

NO. COMPOSITION CAS NO. PERCENT DEMINERALIZED WATER 7732-18-5 100 7732-18-5 WATER 100

SECTION II-B ACUTE TOXICITY DATA

NO. ACUTE ORAL LD50

ACUTE DERMAL LD50 ACUTE INHALATION LD50

NO DATA AVAILABLE

#### HEALTH INFORMATION SECTION III

THE HEALTH EFFECTS NOTED BELOW ARE CONSISTENT WITH REQUIREMENTS UNDER THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910,1200).

#### EYE CONTACT:

MATERIAL IS PRESUMED TO BE NONIRRITATING TO MINIMALLY IRRITATING TO THE EYES. HOT MATERIAL MAY CAUSE THERMAL EYE BURNS.

### SKIN CONTACT:

MATERIAL IS PRESUMED TO BE NONIRRITATING TO SLIGHTLY IRRITATING TO THE SKIN. HOT MATERIAL MAY CAUSE THERMAL BURNS.

#### INHALATION:

http://sww-uschemicalonline.shell.com/USChemicalOnline/doc_view.asp?ViewType=&Vi... 6/19/2007

..... Dominion (was of pour on a sound of the second

MATERIAL IS PRESUMED TO HAVE A LOW ORDER OF ACUTE TOXICITY UPON INHALATION OF MIST OR VAPORS. HOT MATERIAL MAY CAUSE THERMAL BURNS.

#### INGESTION:

MATERIAL IS PRESUMED TO HAVE A LOW ORDER OF ACUTE ORAL TOXICITY. HOT MATERIAL MAY CAUSE THERMAL BURNS.

#### SIGNS AND SYMPTOMS:

TISSUE DAMAGE AT ALL POINTS OF CONTACT WITH HOT MATERIAL.

#### AGGRAVATED MEDICAL CONDITIONS:

NONE.

OTHER HEALTH EFFECTS:

## SECTION IV OCCUPATIONAL EXPOSURE LIMITS

COMP OSHA ACGIH

NO. PEL/TWA PEL/CEILING TLV/TWA TLV/STEL OTHER

P NONE

## SECTION V EMERGENCY AND FIRST AID PROCEDURES

#### EYE CONTACT:

FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE HOLDING EYELIDS OPEN.

## SKIN CONTACT:

FLUSH SKIN WITH WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. GET MEDICAL ATTENTION. DO NOT REUSE CLOTHING OR SHOES UNTIL CLEANED.

## INHALATION:

REMOVE VICTIM TO FRESH AIR AND PROVIDE OXYGEN IF BREATHING IS DIFFICULT. GET MEDICAL ATTENTION.

#### INGESTION:

DO NOT INDUCE VOMITING. GET MEDICAL ATTENTION.

## NOTE TO PHYSICIAN:

## SECTION VI SUPPLEMENTAL HEALTH INFORMATION

NONE IDENTIFIED.

## SECTION VII PHYSICAL DATA

BOILING POINT (DEG F): SPECFIC GRAVITY (H20 = 1): VAPOR PRESSURE (MM HG):

212

1.0

NOT APPLICABLE

MELTING POINT (DEG F): SOLUBILITY IN WATER: VAPOR DENSITY (AIR = 1):

NOT APPLICABLE

NOT APPLICABLE

NOT APPLICABLE

PH: 7.0

EVAPORATION RATE (NORMAL BUTYL ACETATE = 1): NOT APPLICABLE

APPEARANCE AND ODOR:

WATER WHITE; ODORLESS.

## SECTION VIII FIRE AND EXPLOSION HAZARDS

FLASH POINT AND METHOD: NOT APPLICABLE

FLAMMABLE LIMITS/PERCENT VOLUME IN AIR: LOWER: N/APP UPPER: N/APP

EXTINGUISHING MEDIA:

NOT APPLICABLE.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS:

UNUSUAL FIRE AND EXPLOSION HAZARDS:

## SECTION IX REACTIVITY

STABLITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

the factors of the state of the

CONDITIONS AND MATERIALS TO AVOID:

AVOID CONTACT WITH STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS:

## SECTION X EMPLOYEE PROTECTION

## RESPIRATORY PROTECTION:

DO NOT BREATHE STEAM OR MIST.

## PROTECTIVE CLOTHING

DO NOT GET IN EYES. WEAR CHEMICAL GOGGLES IF THERE IS POTENTIAL CONTACT WITH EYES. DO NOT GET ON SKIN, ON CLOTHING. WEAR PROTECTIVE CLOTHING SUCH AS GLOVES, OUTER CLOTHING OR APRON, OVERSHOES AND A FACE-SHIELD SUITABLE TO POTENTIAL EXPOSURE.

ADDITIONAL PROTECTIVE MEASURES:

## SECTION XI ENVIRONMENTAL PROTECTION

#### SPILL OR LEAK PROCEDURES:

*** LARGE SPILLS *** WEAR PROTECTIVE CLOTHING AS APPROPRIATE. SHUT OFF SOURCE OF LEAK IF SAFE TO DO SO. DIKE AND CONTAIN. REMOVE WITH VACUUM TRUCKS OR PUMP TO STORAGE/SALVAGE VESSELS. SOAK UP RESIDUE WITH AN ABSORBENT SUCH AS CLAY, SAND OR OTHER SUITABLE MATERIAL; DISPOSE OF PROPERLY. FLUSH AREA WITH WATER TO REMOVE TRACE RESIDUE. *** SMALL SPILLS *** TAKE UP WITH AN ABSORBENT MATERIAL AND DISPOSE OF PROPERLY.

## SECTION XII SPECIAL PRECAUTIONS

THOROUGHLY WASH UP WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING OR USING TOILET FACILITIES.

## SECTION XIII TRANSPORTATION REQUIREMENTS

#### DEPARTMENT OF TRANSPORTATION CLASSIFICATION:

TRANSPORTATION REQUIREMENTS DETERMINED ON A CASE BY CASE BASIS BY SHIPPING LOCATION.

DOT PROPER SHIPPING NAME:

## OTHER REQUIREMENTS:

BULK, DRUM AND SAMPLE LABELS FOR THIS MATERIAL ARE AVAILABLE FROM THE COMPUTER LABEL SYSTEM (CLS); USE LABEL CODE 830555. THE CLS LABELS DO NOT MEET ANY D.O.T. REQUIREMENTS. THE SHIPPING LOCATION MUST EVALUATE EACH SHIPMENT AND COMPLY WITH D.O.T. MARKING AND LABEL REQUIREMENTS, AS APPROPRIATE.

## SECTION XIV OTHER REGULATORY CONTROLS

THIS PRODUCT IS LISTED ON THE EPA/TSCA INVENTORY OF CHEMICAL SUBSTANCES.

IN ACCORDANCE WITH SARA TITLE III, SECTION 313, THE ATTACHED ENVIRONMENTAL DATA SHEET (EDS) SHOULD ALWAYS BE COPIED AND SENT WITH THE MSDS.

## SECTION XV STATE REGULATORY INFORMATION

STATE LISTED COMPONENT CAS NO. PERCENT STATE CODE

BASED ON INFORMATION AVAILABLE TO SHELL, THIS PRODUCT DOES NOT CONTAIN ANY CHEMICAL SUBSTANCE REGULATED BY A SPECIFIC STATE LIST.

## SECTION XVI SPECIAL NOTES

ADDRESS CHANGED.

THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT. HOWEVER, SHELL MAKES NO WARRANTY, EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SHELL ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.

WE ARE PROVIDING OUR MOST RECENT MATERIAL SAFETY DATA SHEET AND/OR ENVIRONMENTAL DATA SHEET. IF YOU WISH TO RECEIVE UPDATES TO THIS INFORMATION, PLEASE CALL SHELL'S GENERAL MSDS ASSISTANCE LINE (713-241-4819) TO ENSURE THAT YOU ARE ADDED TO SHELL'S REGULAR MSDS DISTRIBUTION SYSTEM.

BE SAFE. READ OUR PRODUCT SAFETY INFORMATION...AND PASS IT ON. (PRODUCT LIABILITY LAW REQUIRES IT) P.O. BOX 4320 HOUSTON, TX 77210-4320 USA

# **ENVIRONMENTAL DATA SHEET**

SHELL EDS: 830555-00 10/06/00

## **DEMINERALIZED WATER**

TELEPHONE NUMBER:

24 HOUR EMERGENCY ASSISTANCE CHEMTREC: 800-424-9300

GENERAL MSDS ASSISTANCE SHELL: 713-241-4819

COMPANY NAME AND ADDRESS

SHELL CHEMICAL COMPANY

P.O. BOX 4320

HOUSTON, TX

77210-4320 USA

PRODUCT CODE: SSSSS

## SECTION I PRODUCT COMPOSITION

NO.	COMPOSITION		CAS	PERCENT
P	DEMINERALIZED	WATER	7732-18-5	100
1	WATER		7732-18-5	100

## SECTION II SARA TITLE III INFORMATION

NO.	ehs ro	ehs tpq	SEC-313	313 CATEGORY	311/312 CATEGORY
	(*1)	(*2)	(*3)	(*4)	(*5)

H-1

*1 = REPORTABLE QUANTITY OF EXTREMELY HAZARDOUS SUBSTANCE, SEC 302

*2 = THRESHOLD PLANNING QUANTITY, EXTREMELY HAZARDOUS SUBSTANCE, SEC 302

*3 = TOXIC CHEMICAL, SEC 313

*4 = CATEGORY AS REQUIRED BY SEC 313 (40 CFR 372.65 C), MUST BE USED ON TOXIC RELEASE INVENTORY FORM

*5 = CATEGORY (FOR AGGREGATE REPORTING REQUIREMENTS UNDER SARA 311, 312)

HEALTH: H-

H-1 = IMMEDIATE (ACUTE) HEALTH HAZARD

H-2 = DELAYED (CHRONIC) HEALTH HAZARD

PHYSICAL: P-3 = FIRE HAZARD

P-4 = SUDDEN RELEASE OF PRESSURE HAZARD

P-5 = REACTIVE HAZARD

## SECTION III

## **ENVIRONMENTAL RELEASE INFORMATION**

NOT APPLICABLE

## SECTION IV RCRA INFORMATION

PLACE IN AN APPROPRIATE DISPOSAL FACILITY IN COMPLIANCE WITH LOCAL REGULATIONS.



**Material Safety Data Sheet** 

Lachine (Montreal), Que H8R 1A3

**EMERGENCY NUMBERS:** 

(USA) CHEMTREC: 1(800) 424-9300 (24hrs) (CAN) CANUTEC: 1(613) 996-6666 (24hrs) (USA) Anachemia : 1(518) 297-4444 (CAN) Anachemia : 1(514) 489-5711

WHMIS	Protective Clothing	TDG Road/Rail
WHMIS CLASS: B-3 D-2B		Not controlled under TDG (Canada).
		PIN: Not applicable. PG: Not applicable.

Product name	DECYL ALCOHOL		
		CI#	Not available.
Chemical formula	CH3(CH2)9OH	CAS#	112-30-1
Synonyms	Agent 504, Alcohol C-10, Antak, Capric alcohol, Decanol, N-Decanol, 1-Decanol, Decylic alcohol, Dytol	Code	AC-2825
	S-91, Epal 10, Lorol 22, AC-2825, 30820	Formula weight	158.29
Supplier	Anachemia Canada. 255 Norman. Lachine (Montreal), Que H8R 1A3	Supersedes	
Material uses	For laboratory use only.		

Section II. Ingredients					
Name	CAS#	%	TLV	TLV	
1) DECYL ALCOHOL	112-30-1	99	Not established by ACGIH		
		}			
		ł			
		1			
	_			*	
		}			
,					

Toxicity values of the hazardous ingredients DECYL ALCOHOL:

ORAL (LD50): Acute: 4720 mg/kg (Rat). 6500 mg/kg (Mouse).
DERMAL (LD50): Acute: 3560 mg/kg (Rabbit).
VAPOR (LC50): Acute: 4000 mg/m3 (Mouse) (2 hour(s)). 3000 mg/m3 (Mammal).

Section III. Phys	DECYL ALCOHOL	page 2/4
Physical state and appearance / Odor	Colorless liquid.	
pH (1% soln/water)	Not applicable.	
Odor threshold	Not available.	
Percent volatile	Not available.	
Freezing point	7°C	
Boiling point	231°C	
Specific gravity	0.829 (Water = 1)	
Vapor density	5.5 (Air = 1)	
Vapor pressure	8.25 mm of Hg (@ 100°C)	
Water/oil dist. coeff.	Not available.	
Evaporation rate	<0.2 (n-Butyl acetate = 1).	· · · · · · · · · · · · · · · · · · ·
Solubility	Insoluble in cold water.	

re and Explosion Data
OPEN CUP: 82°C
Not available.
re 265°C
Oxides of carbon (CO, CO2).
Use DRY chemical, carbon dioxide, foam or water spray. Wear adequate personal protection to prevent contact with material or its combustion products. Self contained breathing apparatus with a full facepiece operated in a pressure demand or other positive pressure mode.
Combustible liquid. Vapor forms explosive mixture with air. Contact with oxidizers may cause fire and/or explosion. This material may produce a floating fire hazard. Emits toxic furnes under fire conditions.

Routes of entry	Ingestion and inhalation. Eye contact. Skin contact. Skin absorption.
Effects of Acute Exposure	Harmful by ingestion, inhalation or skin absorption. Severe irritant. Prolonged exposure can cause narcotic effect.
Eye	Causes severe irritation. May cause severe burns and loss of vision. May cause permanent damage. IRRITATION: EYE-RABBIT 83 mg SEVERE.
Skin	Contact with liquid can cause severe irritation or burns. May cause defatting, drying, cracking, redness, itching, and scaling. The amount of tissue damage depends on lenght of contact.
Inhalation	Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract. Inhalation may be fatal as a result of spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, laryngitis, dyspnea, headache, nausea, and vomiting. Prolonged exposure can cause narcotic effect.
Ingestion	If a small amount of the liquid is aspirated into the lungs, very severe lung damage or death could result. May cause diarrhea, dyspnea, and death. See inhalation.

## Section V. Toxicological Properties

DECYL ALCOHOL

page 3/4

Effects of Chronic Overexposure

See acute effects. Carcinogenic effects: Not available. Mutagenic effects: Not available. Teratogenic effects: Not available. To the best of our knowledge, the chemical, physical, and toxicity of this substance has not been fully investigated.

First Aid Measures
Immediately flush eyes with copious quantities of water for at least 15 minutes holding lids apart to ensure flushing of the entire surface. Seek immediate medical attention.
Immediately flush skin with plenty of water and soap for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash contaminated clothing before reusing.
Remove patient to fresh air. Administer approved oxygen supply if breathing is difficult. Administer artificial respiration of CPR if breathing has ceased. Call a physician.
If conscious, wash out mouth with water. Never give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention. Guard against aspiration into lungs.

Stability	Stable. Conditions to avoid: High temperatures, sparks, open flames and all other sources of ignition, contamination.
Hazardous decomp. products	Not available.
Incompatibility	Oxidizing agents, acids, acid anhydrides, acid chlorides, halogens, acetaldehyde, ethylene oxide, hexamethylene diisocyanate, hydrogen peroxide, sulfuric acid, hypochlorous acid, diisocyanates, isocyanates, lithium aluminum hydride nitrogen teroxide, perchloric acid, barium perchlorate, diethyl aluminum bromide, tri-isobutyl aluminum, aldehydes monomers, polymerizable esters, alkylene oxides.
Reaction Products	Not available. Hazardous polymerization will not occur.

## Section VIII. Preventive Measures

DECYL ALCOHOL

page 4/4

Protective Clothing in Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves. case of snill and leak

Spill and leak

Evacuate the area. Eliminate all sources of ignition. Absorb on sand or vermiculite and place in a closed container for disposal. Use non-sparking tools. Ventilate area and wash spill site after material pick up is complete. DO NOT empty into drains. DO NOT touch spilled material.

Waste disposal

Burn in a chemical incinerator equipped with an after burner and scrubber. According to all applicable regulations.

Storage and Handling

Store in a cool place away from heated areas, sparks, and flame. Store in a well ventilated area. Store away from incompatible materials. Do not add any other material to the container. Do not wash down the drain. Do not breathe gas/fumes/vapor/spray. In case of insufficient ventilation, wear suitable respiratory equipment. Keep container tightly closed and dry. Manipulate under an adequate fume hood. Take precautionary measures against electrostatic discharges. Ground the container while dispensing. Ground all equipment containing material. Use only explosion proof equipment. Use non-sparking tools. Watch for accumulation in low confined areas. Empty containers may contain a hazardous residue. Handle and open container with care. Take off immediately all contaminated clothing. This product must be manipulated by qualified personnel. Do not get in eyes, on skin, or on clothing. Wash well after use. In accordance with good storage and handling practices. Do not allow smoking and food consumption while handling. In case of accident or if you feel unwell, seek medical advice immediately (show the label when possible.).

## Section IX. Protective Measures

Protective clothing

Splash goggles. Impervious rubber gloves, apron, coveralls, and/or other resistant protective clothing. Sufficient to protect skin. Have available and use as appropriate: face shields, rubber suits, aprons, and boots. A OSHAMSHA jointly approved respirator is advised in the absence of proper environmental controls. Do not wear contact lenses. Make eye bath and emergency shower available. Ensure that eyewash station and safety shower is proximal to the work-station location.

Engineering controls

Use only in a chemical fume hood. Use adequate ventilation. Do not use in unventilated spaces.

## Section X. Other Information

comments

Special Precautions or Toxic! Combustible liquid! Severe irritant! May cause burns. Do not breathe vapor. Avoid all contact with the product. Avoid prolonged or repeated exposure. Use only in a chemical fume hood. Keep away from heat, sparks and flame. Handle and open container with care. Container should be opened only by a technically qualified person. RTECS NO: HE4375000 (Decyl alcohol).



Prepared by MSDS Department/Département de F.S..

Validated 20-Oct-2004

Telephone# (514) 489-5711

While the company believes the data set forth herein are accurate as of the date hereof, the company makes no warranty with respect thereto and expressly disclaims all liability for reliance thereon. Such data are offered solely for your consideration, investigation and verification.



Decahydronaphthalene (DH

5501 Baker Road Baytown, Texas 77520 PO Box 1516 Baytown, Texas 77522

Telephone: 281/424-4505 Fax: 281/424-3532

MATERIAL SAFETY DATA SHEET

# Decahydronaphthalene (DHN)

## PRODUCT IDENTIFICATION

Chemical Name: Decahydronaphthalene

Chemical Family: Aromatic hydrocarbon, C10H18

Trade Name: DHN

Synonyms: Decalin

Revision Date: 04/16/03

Manufacturer / Distributor: Advanced Aromatics, L.P.

5501 Baker Road

Baytown, TX 77520

**EMERGENCY CONTACT:** 

(281) 424-4505

24 hour number: (281) 424-9566

Chemtree: (800) 424-9300

## HAZARDOUS COMPONENTS

The following chemical components have been determined to be hazardous under OSHA's Hazard Communication Std. 29 CFR 1010, 1200, and are listed in Table Z-1, Z-2, and/or Z-3 1910, 1000 (Toxic and Hazardous Substances).

CAS No.	Material or Compo	nent	Percentage
91-17-8	Decahydronaphtha	lene, mixture of Cis and Trans	95 - 99%
119-64-2	1,2,3,4-Tet	rahydronaphthalene	< 1 %
	PHYSICAL DA	TA (TYPICAL)	
Specific Gravity (Water = 1): 0.8927 - 0.87	7 @ 68 F	Boiling Point: 368 F	·
Vapor Density (Air=1): 4.55		Freezing Point: -46 F	
Vapor Pressure (PSIA): 1.0 mmHg @ 100	F	Evaporation Rate (Butyl Acetate = 1): <	: 1
Solubility In Water: insoluable in water, solu ether	uable in alcohol and	Viscosity: 1.348 cp @ 68 F	

Physical Description: clear colorless liquid with an aromatic odor.

## FIRE AND EXPLOSION DATA

Flash Point:

F 136

Autoignition Temperature:

482 F

Flammable Limits in Air % by Volume:

Lower: 0.7

Upper: 4.9

Extinguishing Media: Use dry chemical, carbon dioxide, water spray and foam suitable for hydrocarbon use.

Special Fire Fighting Procedures: Flammable and toxic vapors given off in a fire. Wear complete personal protection equipment. SCBA required. Keep area controlled to prevent exposures to people downwind.

Unusual Fire and Explosion Hazard: explosive air mixtures are created in a fire situation

or "Disclaimer of Liability", see the statement on Page 5.

18 (09) 17 (4)	(A. Sandare S. Mary	AUDION FAN		C 3440	4-X 157
N. C. C.	***	~ <del>~ ~ ~ ~ ~</del>	71 T 7 S Y		1 110
54.14 M	AC	78 W/ A		B / 18 1	
			12 14 WE	J / 4 : 1 :	- 2
70.00		15			

ibility: Product is stable under normal storage conditions, however; prolonged exposure to oxygen can cause Hydroperoxide ormation.

Conditions to Avoid: Extreme heat, sources of ignition, strong oxidizers, and long-term storage with oxygen in the vapor space.

Incompatibility: Strong Oxidizers.

Hazardous Polymerization: Will not occur.

Hazardous Decomposition Products When Heated: Flammable vapors are emitted creating carbon dioxide and toxic fumes of carbon monoxide.

## HMIS RATING

NFPA 704 Rating:

0 - Insignificant

1 - Slight

2 - Moderate

3 - High

4 - Extreme

Health: 2

Flammability: 2

Reactivity: 0

Special Hazard: None

Personal Protection: B

## **HEALTH HAZARD INFORMATION**

Symptoms Of Exposure:

Symptoms of exposure to this product may include irritation to the skin, eyes, mucous membranes and respiratory tract, dizziness, narcosis, suffocation, lower blood pressure, CNS depression, nausea and headache. Prolonged skin contact may result in dermatitis. Eye contact may result in temporary corneal damage.

Health Effects:

ACUTE - Eye, skin, respiratory system, and mucous membrane irritation accompanied by headache and nausea. Liver and kidney damage caused by acute ingestion.

CHRONIC - Permanent damage to the skin, liver, kidneys due to overexposure.

estion: Do not take internally. Seek physician advice immediately.

Skin: Avoid prolonged or repeated skin contact.

Inhalation: Avoid inhalation of vapors. Use in well ventilated areas.

Eyes: Avoid chemical contact with the eyes.

Special Medical Conditions Aggravated by Exposure: None known.

Primary Route of Entry: Inhalation of vapors and skin contact.

Exposure Limits: None Established for this product

(Naphthalene) OSHA PEL- 10 ppm (50 mg/m3) TWA for 8-hour workday, STEL = 15 ppm (75 mg/m3).

ACGIH TLV- 10 ppm (52 mg/m3) TWA for 8-hour workday.

Carcinogen Status: Not listed on (NTP) National Toxicology Program Annual Report on Carcinogens or (IARC) International Agency for Research on Cancer "Monographs", and is not classified by OSHA as a carcinogen.

NTP studies TR-410 and TR-500 show evidence of increased tumor growth in rodents after inhalation of Naphthalene.

Toxicity:

NIOSH REGISTRY NUMBER: QJ3150000

TOXICITY:

Dosemodespecieamount / unitsMild IrritantDraize Test (eye)-Rabbit500 mg/24 hr.Mild IrritantDraize Test (skin)-Rabbit10 mg/24 hr.LD50Oral -Rat4170 mg/kg

· simer of Liability", see the statement on Page 5.

Advanced Aromatics, L.P.

Decahydronaphthalene (DHN)

04/16/03

LC50 LC50

Inhalation -Inhalation - Rat mus

710 ppm/4H 1085 ppm/4H

Irritant TCLo

Inhalation -

Human

100 ppm

ARCINOGENICITY:

Tumorigenic Data:

No test data available

NTP carcinoginicity studies:

No test data available for THN, but Naphthalene is studied in TR-410 and TR-500 by the NTF

MUTATION DATA:

No test data available

TERATOGENICITY:

No test data available

## FIRST AID

Ingestion: Do not induce vomiting. Immediately seek medical attention.

Skin: Remove soiled clothing and wash with soap and water, Seek medical attention if irritation develops or persists.

Inhalation: Remove to fresh air. If breathing irregular, administer oxygen. Immediately seek medical attention.

Eyes: Flush eyes with water for at least 15 minutes. Immediately seek medical attention.

## SPILL OR LEAK PROCEDURES / WASTE DISPOSAL

In Case of a Transportation Accident, Contact CHEMTREC at 1-800/424-9300.

IN CASE OF SPILLS OR RELEASE: Refer to DOT NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK for handling rmation. For small spill, use solid absorbent and shovel into disposal container. For large spills, dike the area to facilitate salvage or disposal. Shut off ignition sources and avoid breathing vapors. Avoid runoff into sewers and advise authorities.

Waste Disposal Method: Adhere to all local, state, and federal regulations. See regulatory information below. Disposal: If this product becomes a waste, it must be disposed of as required by applicable state and federal laws.

## SPECIAL PROTECTION INFORMATION

Respiratory Protection: Organic vapor cartridge respirator with particulate filter, or SCBA.

Gloves: Non-permeable Nitrile rubber with durable construction to match the task.

Eyes: Chemical splash goggles or face shield.

Ventilation: Use local exhaust as required to control exposure. Electrical classification of equipment should be considered.

## SPECIAL PRECAUTIONS

Storage and Handling: Product should be stored in closed containers under nitrogen atmosphere and located in a cool dry location, away from source of ignition and oxidizing agents. Avoid breathing vapors and mists, along with prolonged skin contact.

Disclarate of Liability", see the statement on Page 5.

Page 3 of 5

## TRANSPORTATION INFORMATION

: proper shipping name / hazard class may vary by packaging, properties, and mode of transportation.

. roper shipping names are:

ALL TRANSPORTATION MODES:

Decahydronaphthalene

AIR TRANSPOIRATION:

Decahydronaphthalene

(IATA / ICAO)

MARINE TRANSPORTATION:

Decahydronaphthalene

(IMDG / IMO)

UN/ID NO .:

UN1147

HAZARD CLASS - PRIMARY:

3 (Flammable Liquid)

PACKING GROUP:

Ш

CARGO AIRCRAFT LIMIT:

220 L

PASSENGER AIRCRAFT LIMIT:

60 L

FLASH POINT:

136 F

TECHNICAL NAME(s):

Decahydronaphthalene, 1,2,3,4-Tetrahydronaphthalene

RQ LBS. (Per pkg.): RQ COMPONENTS (s): N/A None

MARINE POLLUTANT (s):

None

## REGULATORY INFORMATION RIGHT-TO-KNOW PROGRAM

rats product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and 40 CRF472.

CAS No.	Material or Component	% by Weight
91-17-8	Decahydronaphthalene, mixture of Cis and Trans	95 - 99%
119-64-2	1,2,3,4-Tetrahydronaphthalene	< 1 %

## THE FOLLOWING FEDERAL REGULATIONS APPLY TO THIS PRODUCT:

OSHA HAZARD COMMUNICATION STD: 29CFR 1910.1200, 29 CFR 1910.1000 Table Z-1, Z-2, and/or Z-3.

None established for Decahydronaphthalene

Based on a hazard evaluation, the following components in this product are hazardous for the reasons listed below.

-----Immediate (acute) health hazard

-----Delayed (chronic) health hazard

--xx--Fire Hazard

-----Sudden release of pressure hazard

-----Reactive hazard

hisclaimer of Liability', see the statement on Page 5.

Page 4 of 5

## ERCLA, 40 CFR 117,302:

This product contains no reportable quantity (RQ) substances, requiring reporting to the National Response Center, Washington D.C. (1-800-424-8802). There may also be other state and local requirements to report spills.

#### SARA TITLE III:

Section 302 - This product does not contain any components regulated under SARA TITLE III, Section 302 (Extremely Hazardous Substance).

TOXIC SUBSTANCE CONTROL ACT (TSCA): The component(s) in this product are on the TSCA Inventory.

# ALL INFORMATION ON THIS MSDS MUST BE INCLUDED IN ALL MSDS THAT ARE COPIED AND DISTRIBUTED FOR THIS MATERIAL.

This information is provided for the customers of Advanced Aromatics; however, it does not address in detail the use, storage or handling of the product. Users of the product, considering their use, storage or handling of the product, may need to develop additional procedures. The information should not be relied on to insure compliance by the customer with any federal, state or local legal requirements. Information provided herein, are not product specifications.

Method of control: None PRODUCT:

			VAPOR	T	T				1
	}	1	Pressure @	1	1	LIQUID			
	CAS	MOLECULAR	100 F	LIQUID	LIQUID	MOLE	PART, PRESS	VAPOR	VAPOR
CONSTITUENTS	NUMBER	WEIGHT	psia	WT. %	MOLES	FRACTION	psia	WT.	WT. FRAC.
	1	1			į	1	1		
decahydronaphthalene	91-17-8	138.3	0.0400	100.00	0.7233	1.0000	0.0400	138.2500	1.0000
	0	0.0	0.000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000
(	){	0.0	0.000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000
]	0	0.0	0.000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000
[	) o	0.0	0.000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000
{	0	0.0	0.000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000
}	o l	0.0	0.000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000
}	) o	0.0	0.000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000
,	) o	0.0	0.000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000
}	) o	0.0	0.000	0.00	0.0000	0.0000	0.0000	0.0000	0.0000
	1			1	<u> </u>	<b>.</b>			·
L				100.00	0.7233	1.0000	0.0400	138.2500	1.0000

					NUMBER OF		ACTUAL EMISSIONS (1)			ALLOWABLE EMISSIONS (2)		EXCEEDS HOURLY	EXCEEDS ANNUAL
	- 1		VAPOR		CONTA		HOURLY	ANNUAL	APPLICABLE		O110 (2)		ALLOWABLE
	- 1	TLV	WEIGHT	EMISSIONS	<u>_</u>	<u> </u>	EMISSIONS	EMISSIONS	EXEMPTION	HOURLY	ANNUAL	3	EMISSIONS ?
CONSTITUENTS		mg/m3	FRACTION	(b/container	Per Hour	Per Year	lb/hr	tpy	NO.	lb/hr	tpy	ib/hr	tpy
1	1								1				
decahydronaphthalene	1	0	1.00000	0.98474	1	1000	0.9847	0.4924		-	-	-	}
]	0	0	0.00000	0.00000	1	1000	0.0000	0.0000		-	-	-	. !
}	0	0	0.00000	0.00000	2	1000	0.0000	0.0000	- 1	-	-	-	-
}	0	0	0.00000	0.00000	2	1000	0.0000	0.0000			-		-
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	0	0	0.00000	0.00000	2	1000	0.0000	0.0000		-		-	-
	0	0	0.00000	0.00000	2	1000	0.0000	0.0000	-	-	-	-	-
1	- 1		<b>{</b>				i	l			İ	1	

P - On Facility Appoved Permit List, or not a regulated pollutant

N/A - Not pulbished in ACGIH

N/A* - Published value in ACGIH is based on particulate. Due to the nature of the cleaning process, emission of particulate will not occur with this product.

Note: Water is not a regulated pollutant.

(1) Calculation Basis: [((MV * voi * VP) / (R * T)) * wt] * Z * (1-(e/100))

(2) Exemption Allowables:

lb/hr

ton/yr 10.0

where:

MV = Vapor Molecular weight (lb / lb-moles)

1.0 E = L/K 106.262

VP = True Vapor pressure (psia)

106,261

vol. = Container Volume (ft3) = 1070 ft3 (8,000 gal) R = Gas Constant = 10.73 psia ft3 / lb mole R

 $L = TLV (mg/m^3)$ 

T = Temperature = 560 R

Z = No. of trucks / year or trucks/hr

98 %

0 %

212.6 Extrapolated based on distance of 190 feet.

wt = Vapor weight fraction

e = Control efficiency

Flare = None ≈ Control efficiency:

0 %

H:\client\hoyeneval\^



#### MATERIAL SAFETY DATA SHEET

#### **CRUDE GLYCERINE**

#### Section 1 - Product and Company Information

Crude Glycerine, Crude Glycerol, 80% Glycerine

**Green Earth Fuels of Houston** 5151 San Felipe St.

**Chemical Name or Synonym** 

**For Product Information** 713.621.3336

**Emergency Phone Number** 

713.621.3336

Suite 1390

Houston, TX 77056

**Code Number Product Class** 

102

Glycerine, Crude

**MSDS** Revision Date

01/29/2007

MSDS No.

GEFH-EHS-102

**MSDS Origination Date** 

MSDS Revision No.

01/26/2007

01

## Section 2 - Chemical Composition

Component Glycerine (1,2,3-trihydroxypropane)	<u>CAS No.</u> 56-81-5	Concentration (% wt) 80-93		
Water	7732-18-5	2-20		
Free Fatty Acids	112-80-1	0-10		
Fatty Acid Methyl Esters	68990-52-3	0-10		
Sodium Chloride	7647-14-5	2-7		
Methanol	67-56-1	0.1-0.5		

#### Section 3 - Hazards Identification

## **Potential Health Affects:**

## **Acute Eye:**

May irritate; will not damage eyes.

## Acute Skin:

May irritate, may absorb into skin but toxic effects unlikely.

## **Acute Inhalation:**

Product mist may be slightly irritating

#### **Acute Ingestion:**

May be harmful; large amounts may cause diarrhea.

## Section 4 - First Aid Measures

## First Aid Measures for Accidental:

## Eye Exposure:

Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if there is any persistent irritation.

Wash with soap and plenty of water. Remove contaminated clothing and do not reuse until thoroughly cleaned or laundered. Seek medical help promptly if there is persistent itching or redness in the affected area.

Remove from contaminated area promptly. Seek medical help promptly if there is difficulty in breathing.

Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below the hips to prevent inhalation of vomited material. Seek medical help.

GEFH-EHS-102 Crude Glycerine MSDS

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Revision Date: 01/29/07



## MATERIAL SAFETY DATA SHEET

## **CRUDE GLYCERINE**

## Section 5 - Fire Fighting Measures

#### Fire Hazard Data:

Flashpoint: 160°C (320°F)

Autoignition: 400°C (752°F)

Flammability Limits (% v/v): 0.9

## Extinguishing Media:

Water spray, carbon dioxide, Dry chemical powder or appropriate foam.

## **Special Fire Fighting Procedures:**

Wear self contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

## **Unusual Fire and Explosion Hazards:**

May emit toxic fumes (Acrolien) under fire conditions.

## Section 6 - Accidental Release Measures

#### Cleanup and Disposal of Spill:

Wear respirator, chemical safety goggles, rubber boots and chemical gloves. Absorb with sand or vermiculite and place in closed containers for disposal. Ventilate spill area and wash after removal of material.

## Section 7 - Handling and Storage

#### **Handling and Storage:**

Store in a cool, dry environment. Product is very hygroscopic and water content may increase when exposed to air (particularly at higher temperatures).

## Section 8 - Exposure Controls/Personal Protection Equipment

#### **Exposure Guidelines**

Component	<u>ACGIH</u>	OSHA - PELs	<u>Other</u>
Glycerine	10 mg/m³ (mist)	10 mg/m³ (mist)	N/A
Water	Not Established	Not Established	N/A
Free Fatty Acids	Not Established	Not Established	N/A
Fatty Acid Methyl Esters	Not Established	Not Established	N/A
Sodium Chloride	Not Established	Not Established	N/A
Methanol	200ppm TWA	200ppm TWA	200ppm (NIOSH) TWA

## **Engineering Controls:**

Provide exhaust ventilation when heated or exposed to mist conditions. Safety shower and eye bath, mechanical exhaust required.

## **Respiratory Protection:**

Avoid inhalation, use NIOSH/OSHA approved respirator around airborne vapor or mist.

## **Eye/Face Protection:**

Avoid Contact with eyes; Safety glasses with eye shields should always be worn, chemical compatible safety goggles recommended.

GEFH-EHS-102 Crude Glycerine MSDS

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Revision Date: 01/29/07

# GreenEarth fuels, LIC harps at length of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the later of the

## **MATERIAL SAFETY DATA SHEET**

#### **CRUDE GLYCERINE**

#### **Skin Protection:**

Avoid contact with skin and/or clothing; wear chemical compatible safety gloves when handling.

## Section 9 - Physical and Chemical Properties

Physical Appearance: Light amber to dark brown translucent liquid.

**Odor:** Slight to moderate musty odor.

**pH:** 5.0 to 8.0.

Specific Gravity: 1.205 (25°C)

Water Solubility: Miscible.

Melting Point: 17.9°C

Freezing Point: <10°C

Boiling Point: 190°C (374°F)

Vapor Pressure: <1 mm Hg

Vapor Density: 3.17 (air=1)

Percent Volatiles by Weight: 0.1 to 0.5

**Viscosity:** 1490 centipoise (20°C)

## Section 10 - Stability and Reactivity

#### **Chemical Stability:**

Stable.

#### **Conditions to Avoid:**

Avoid excessive heat, open flame. Protect from moisture, strong bases and oxidizing agents.

## Materials/Chemical Incompatibility:

Strong oxidizing agents.

## **Hazardous Decomposition Products:**

Carbon monoxide and carbon dioxide.

#### **Hazardous Polymerization:**

Will not occur.

## Section 11 - Toxicological Information

#### LD50 - LC50 Mixture:

LD50 (oral, rat) is 12,600 mg/kg.

## Route of Entry:

Inhalation: No Skin: No Ingestion: No

GEFH-EHS-102 Crude Glycerine MSDS

Page 3 of 5'

Revision Date: 01/29/07

# Green Berth Puets LLC forgration blatusis

## MATERIAL SAFETY DATA SHEET

#### **CRUDE GLYCERINE**

#### **Acute/Chronic Effects:**

May cause skin irritation, may be harmful if absorbed through skin.

May cause eye irritation.

May be harmful if inhaled.

Material may be irritating to respiratory system.

May be harmful if swallowed. Mildly toxic, may cause gastrointestinal discomfort.

## Carcinogenicity:

NTP: No IARC: No OSHA: No

#### Signs/Symptoms of Overexposure:

Irritation, nausea, general malaise.

#### Section 12 - Ecological Information

## Spill containment:

Create dyke to control spill and prevent/reduce environmental contamination.

#### Handling Spill:

Recover liquid with suitable pumps into holding vessel, absorb remaining with inert absorbent. Remove Absorbent to container for disposal.

#### **Environmental Impact:**

Product cannot accumulate in living tissue, this product is readily and rapidly biodegradable in the presence of oxygen.

#### Section 13 - Disposal Considerations

## **Waste Disposal Method:**

Contact a licensed professional waste disposal service to dispose of this product. Product may be blended with suitable solvent and burned by chemical incineration at an approved facility. Observe all Federal, State and Local environmental reporting and regulations.

#### Section 14 - Transportation Information

## **US Department of Transportation Shipping Name:**

Crude Glycerine

## **US Department of Transportation Shipping Code:**

N/A

## Section 15 - Regulatory Information

#### **Federal Regulations:**

#### Sara Title III Hazard Classes:

Fire Hazard:

None Noted

Reactive Hazard:

None Noted

Release of Pressure:

None Noted

Acute Health Hazard:

None Noted

Chronic Health Hazard:

None Noted

TSCA:

GEFH-EHS-102 Crude Glycerine MSDS

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Revision Date: 01/29/07

# Green Barth A Fuell, LIC

## MATERIAL SAFETY DATA SHEET

## **CRUDE GLYCERINE**

## Federal Regulations:

Product is on the TSCA Inventory List.

## Other Regulations:

N/A

## Section 16 - Other Information

## **Key Legend**

N/A - Not Applicable

ND - Not Determined

ACGIH – American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

TLV - Threshold Limit Value

TWA - Time Weighted Average

STEL - Short Term Exposure limit

NTP - National Toxicology Program

IARC - International Agency for Research on Cancer

The information contained herein is based on the data available to us and is believed to be correct. However, Green Earth Fuels of Houston, LLC. makes no warranty, expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

## **HALLIBURTON**

## **MATERIAL SAFETY DATA SHEET**

**Product Trade Name:** 

**CRUDE OIL** 

**Revision Date:** 

05-Jan-2006

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Trade Name:** 

**CRUDE OIL** 

Synonyms:

None

**Chemical Family:** 

Organic hydrocarbon

Application:

Sample Kit

Manufacturer/Supplier

Halliburton Energy Services

P.O. Box 1431

Duncan, Oklahoma 73536-0431

Emergency Telephone: (281) 575-5000

Prepared By

Chemical Compliance

Telephone: 1-580-251-4335

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Benzene	71-43-2	<1	0.5 ppm	1 ppm
Hydrogen sulfide	7783-06-4	< 1	10 ppm	20 ppm
Aromatic solvent	8002-05-9	60 - 100%	Not applicable	500 ppm

## 3. HAZARDS IDENTIFICATION

**Hazard Overview** 

May cause eye and skin irritation. May be harmful if swallowed. Potential carcinogen.

May be harmful if inhaled. Flammable.

## 4. FIRST AID MEASURES

Inhalation

If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably

mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Skin

Wash with soap and water. Get medical attention if irritation persists. Remove

contaminated clothing and launder before reuse.

Eyes

In case of contact, or suspected contact, immediately flush eyes with plenty of water

for at least 15 minutes and get medical attention immediately after flushing.

Ingestion

Get medical attention! If vomiting occurs, keep head lower than hips to prevent

aspiration.

**Notes to Physician** 

Not Applicable

CRUDE OIL Page 1 of 6

## FIRE FIGHTING MEASURES

Flash Point/Range (F): 20 - 72 Flash Point/Range (C): -6.7 - 22.8Flash Point Method: TCC Autoignition Temperature (F): 590 Autoignition Temperature (C): 310 Flammability Limits in Air - Lower (%): 1.1 Flammability Limits in Air - Upper (%):

Fire Extinguishing Media

Carbon Dioxide, Dry Chemicals, Foam,

6.0

Special Exposure Hazards

Decomposition in fire may produce toxic gases. Use water spray to cool fire exposed surfaces. Vapors are heavier than air and may accumulate in low areas. Vapors may travel along the ground to be ignited at distant locations.

Fire-Fighters

Special Protective Equipment for Full protective clothing and approved self-contained breathing apparatus required for

fire fighting personnel.

**NFPA Ratings: HMIS** Ratings:

Health 1, Flammability 3, Reactivity 0 Flammability 3, Reactivity 0, Health 1

## **ACCIDENTAL RELEASE MEASURES**

Personal Precautionary Measures Use appropriate protective equipment.

**Environmental Precautionary** 

**Measures** 

Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning /

**Absorption** 

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials.

Scoop up and remove.

## HANDLING AND STORAGE

Handling Precautions

Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after

use. Launder contaminated clothing before reuse.

Sto rage Information

Store away from oxidizers. Store in a cool well ventilated area. Keep container

closed when not in use.

## **EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Engineering Controls** 

Use in a well ventilated area. Local exhaust ventilation should be used in areas

without good cross ventilation.

Res piratory Protection

Not normally needed. But if significant exposures are possible then the following

respirator is recommended: Organic vapor respirator. Acid gas respirator.

Hand Protection

Nitrile gloves.

Skin Protection

Rubber apron.

Eye Protection

Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions

Eyewash fountains and safety showers must be easily accessible.

**CRUDE OIL** Page 2 of 6

## PHYSICAL AND CHEMICAL PROPERTIES

**Physical State:** 

Color:

Odor:

pH: Specific Gravity @ 20 C (Water=1):

Density @ 20 C (lbs./gallon): Bulk Density @ 20 C (lbs/ft3): Boiling Point/Range (F):

Boiling Point/Range (C):

Freezing Point/Range (F): Freezing Point/Range (C): Vapor Pressure @ 20 C (mmHg):

Vapor Density (Air=1): **Percent Volatiles:** 

Evaporation Rate (Butyl Acetate=1): Solubility in Water (g/100ml):

Solubility in Solvents (g/100ml): VOCs (ibs./gailon):

Viscosity, Dynamic @ 20 C (centipoise): Viscosity, Kinematic @ 20 C (centistrokes):

Partition Coefficient/n-Octanol/Water:

Molecular Weight (g/mole):

Liquid

Yellow to Green or Black

Rotten egg Not Determined

0.78 - 0.97Not Determined Not Determined

< 100 < 38

Not Determined

-60 - -20 100-500 3 - 4

Not Determined Not Determined Insoluble

Not Determined Not Determined Not Determined

< 15

Not Determined Not Determined

## STABILITY AND REACTIVITY

Stability Data:

Stable

Hazardous Polymerization:

Will Not Occur

**Conditions to Avoid** 

None anticipated

Incompatibility (Materials to

Avoid)

Strong oxidizers.

**Hazardous Decomposition** 

**Products** 

Carbon monoxide and carbon dioxide.

Additional Guidelines

Not Applicable

## TOXICOLOGICAL INFORMATION

Principle Route of Exposure

Eye or skin contact, inhalation.

Inhalation

May cause respiratory irritation. May cause chemical pneumonia. Excessive inhalation causes headache, dizziness, nausea and incoordination.

**Skin Contact** 

Causes drying of the skin. Prolonged or repeated contact may cause skin irritation.

**Eye Contact** 

May cause eye irritation.

Ingestion

Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.

**Aggravated Medical Conditions** 

Skin disorders. Respiratory disorders.

Chronic Effects/Carcinogenicity

Contains petroleum distillates which have been shown to cause skin cancer in laboratory animals.

Other Information

None known.

**CRUDE OIL** Page 3 of 6

## **Toxicity Tests**

**Oral Toxicity:** 

LD50: 4300 mg/kg (Rat)

**Dermal Toxicity:** 

LD50: > 2000 mg/kg (Rabbit)

Inhalation Toxicity:

Not determined

**Primary Irritation Effect:** 

Not determined

Carcinogenicity

Not determined

Genotoxicity:

Not determined

Reproductive / **Developmental Toxicity:**  Not determined

#### 12. **ECOLOGICAL INFORMATION**

Mobility (Water/Soil/Air)

Not determined

Persistence/Degradability

Slowly biodegradable

**Bio-accumulation** 

Not Determined

## **Ecotoxicological Information**

Acute Fish Toxicity:

Not determined

Acute Crustaceans Toxicity: Not determined **Acute Algae Toxicity:** 

Not determined

**Chemical Fate Information** 

Not determined

Other Information

Not applicable

## **DISPOSAL CONSIDERATIONS**

Disposal Method

Disposal should be made in accordance with federal, state, and local regulations.

**Contaminated Packaging** 

If empty container retains product residues, all label precautions must be observed. Transport with all closures in place. Return for reuse or disposal according to

national or local regulations.

## TRANSPORT INFORMATION

## Land Transportation

#### DOT

Petroleum Crude Oil, 3, UN1267, II, (-6.7 C minimum) **NAERG 128** 

## Canadian TDG

Petroleum Crude Oil, 3, UN1267, II, (-6.7 C minimum)

#### ADR

UN1267, Petroleum Crude Oil, 3, II

CRUDE OIL Page 4 of 6

## Air Transportation

ICAO/IATA

UN1267, Petroleum Crude Oil, 3, II

## Sea Transportation

**IMDG** 

Petroleum Crude Oil, 3, UN1267, II, (-6.7 C minimum)

EmS F-E, S-E

## Other Shipping Information

Labels:

Flammable Liquid

## REGULATORY INFORMATION

## **US Regulations**

**US TSCA Inventory** 

All components listed on inventory.

**EPA SARA Title III Extremely Hazardous Substances** 

Not applicable

EPA SARA (311,312) Hazard

Class

Acute Health Hazard

This product does not contain a toxic chemical for routine annual "Toxic Chemical

Release Reporting" under Section 313 (40 CFR 372).

EPA CERCLA/Superfund

EPA SARA (313) Chemicals

Not applicable. Reportable Spill Quantity For This

**Product** 

**EPA RCRA Hazardous Waste** 

Classification

If product becomes a waste, it does meet the criteria of a hazardous waste as

defined by the US EPA, because of:

Ignitability D001

California Proposition 65

The California Proposition 65 regulations apply to this product.

MA Right-to-Know Law

One or more components listed.

NJ Right-to-Know Law

One or more components listed.

PA Right-to-Know Law

One or more components listed.

Canadian Regulations

**Canadian DSL Inventory** 

All components listed on inventory.

**WHMIS Hazard Class** 

B2 Flammable Liquids D2B Toxic Materials

## OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS Not applicable

> **CRUDE OIL** Page 5 of 6

#### Additional Information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

#### **Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

***END OF MSDS***

CRUDE OIL Page 6 of 6

TP 4025

## MATERIAL SAFETY DATA SHEET



Page: 1 DATE PREPARED: 11/22/1999 MSDS No: L001 Citric Acid Crystal

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: Citric Acid Crystal

Product Code: £001

Product Name: Citric Acid, Anhydrous Chemical Family: Organic acid, Chelant

Molecular Formula: HOC(COOH)(CH2COOH)2

MANUFACTURER:

HydroChem Industrial Services, Inc.

900 Georgia Avc. Deer Park, TX 77536

Customer Service: (800) 934-9376

24 HR. EMERGENCY TELEPHONE

NUMBERS:

Emergency Contact: Emergency Phone HydroChem ER (800) 569-4889

COMMENTS:

EFFECTIVE DATE: 1/1/00

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

wt.% CAS Registry #

Cirtic Acid, Anhydrous

COMMENTS:

Product Exposure Limits:

Nuisance Dust - OSHA PEL: 15 mg/m3 ACGIH TLV: 10 mg/m3

Respirable Fraction - OSHA PEL: 5 mg/m3

#### 3. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

IMMEDIATE CONCERNS:

No hazard in normal industrial use.

Dust may be irritating to eyes and respiratory tracts.

## 4. FIRST AID MEASURES

EYES:

Immediately flush eyes with water for 30 minutes while holding cyclids open. Seek medical attention.



DATE PREPARED: 11/22/1999

MSDS No: L001 Citric Acid Crystal

#### SKIN:

Immediately wash with soap and water. Rinse thoroughly, Seek medical attention if effects occur. Launder contaminated shoes and clothing before reuse.

#### INGESTION:

If swallowed, give 2 glasses of milk (preferred) or water and consult physician.

#### INHALATION

Remove to fresh air. See a doctor if effects occur.

## 5. FIRE FIGHTING MEASURES

Flashpoint and Method: >200°F 93°C Flammable Limits: Not determined

Autoignition Temperature: Not Determined

#### EXTINGUISHING MEDIA:

Use alcohol foam, carbon dioxide, dry chemical or water spray when fighting fires involving this material.

### HAZARDOUS COMBUSTION PRODUCTS:

Oxides of carbon and harmful organic chemical fumes.

## FIRE FIGHTING EQUIPMENT:

As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective clothing to prevent contact with skin and eyes.

## 6. ACCIDENTAL RELEASE MEASURES

## GENERAL PROCEDURES:

Scoop into appropriate containers. Flush residual with plenty of water.

## 7. HANDLING AND STORAGE

#### GENERAL PROCEDURES:

Refer to Section 8.

#### STORAGE:

No special precautions required.

Avoid wetting.

Store away from oxidizers.



DATE PREPARED: 11/22/1999

MSDS No: L001 Citric Acid Crystal

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## ENGINEERING CONTROLS:

Ventilation - General and local ventilation are required.

#### PERSONAL PROTECTION

EYES AND FACE:

Chemical goggles required and an eye wash in work area-

#### RESPIRATORY:

Use NIOSH approved respirator with dust and mist protection.

#### PROTECTIVE CLOTHING:

Clean body covering and chemical resistant gloves.

#### OTHER USE PRECAUTIONS:

Safety shower and eye wash in the work area.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Powder

Color: White pH: 0.6

Percent Volatile: Not Established Vapor Pressure: Not Available Melting Point: 307°F 153°C Solubility in Water: Soluble Specific Gravity: 1.54

## COMMENTS:

pH: pH listed above is for a 50% aqueous solution

#### 10. STABILITY AND REACTIVITY

STABLE: Yes

HAZARDOUS POLYMERIZATION: No

## HAZARDOUS DECOMPOSITION:

When heated strongly or burned, oxides of carbon and harmful organic chemical fumes are released.

#### INCOMPATIBLE MATERIALS:

Oxidizers, bases. Can be explosive with metal nitrates.



DATE PREPARED: 11/22/1999

MSDS No: L001 Citric Acid Crystal

## 11. TOXICOLOGICAL INFORMATION

#### ACUTE

Eyes: Severe in itant. Causes pain and redness. Prolonged or repeated contact may cause mild burn.

Skin: Irritant. May cause pain, rechess, dermatitis. Not likely to be absorbed in toxic amounts. Ingestion: No effect expected. Swallowing large amounts may cause illness. Inhalation: Irritant. May cause pain and coughing

#### TARGET ORGANS:

Skin

#### GENERAL COMMENTS:

Carcinogens:

Not listed by IARC, USA NTP, or USA OSHA.

#### COMMENTS:

Only selected Registry of Toxic Effects of Chemical Substances (RTECS) data is presented in this document. See the actual entry in RTECS for complete information.

RTECS Number: GE730 000

LC(50) = 11.7 g/kg on rats (for anhydrous citric acid)

#### 12. ECOLOGICAL INFORMATION

#### GENERAL COMMENTS:

Degradability: Biodegradable.

Fish Toxicity: LC50 (P. promelas) = 150 pp m

#### COMMENTS:

BOD = 0.48 p/p; COD = 0.70 p/p (68% degradation in 5 days)

## 13. DISPOSAL CONSIDERATIONS

#### PRODUCT DISPOSAL:

Dispose of in accordance with ALL applicable federal, state and local regulations.

## EMPTY CONTAINER:

Send empty bags to sanitary lamifill. Reader other types of containers unuseable by pn cturing or crushing and sanitary landfill unless prohibited by local regulations.

## RCRA/USEPA WASTE INFORMATION:

This material is not a RCRA regulated material.



DATE PREPARED: 11/22/1999

MSDS No: L001

Citric Acid Crystal

#### COMMENTS:

Always follow ALL applicable federal, state and local regulations.

## 14. TRANSPORT INFORMATION

#### DOT (DEPARTMENT OF TRANSPORTATION)

Proper Shipping Name: Citric Acid, Anhydrous - Nonregulated

Reportable Quantity (RQ) Under CERCLA: None

Placards: None Label: None

## 15. REGULATORY INFORMATION

#### UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

Fire: No Pressure Generating: No

Reactivity: No

Acute: Yes

Chronic: No

Title III Notes: This product contains no substances which are defined as toxic chemicals under the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (40 CFR Part 372).

## TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA Status: All components of this material are on the TSCA inventory.

#### STATE REGULATIONS

## PROPOSITION 65 STATEMENT:

This product does not contain any substance(s) which are defined by the state of California to cause cancer, birth defects, or other reproductive effects.

## 16. OTHER INFORMATION

REASON FOR ISSUE:

Biannual review

Approved by: Charles M Maddin, PhD, FAIC

Approval date: 11/22/1999



DATE PREPARED: 11/22/1999

MSDS No: L001 Citric Acid Crystal

## REVISION SUMMARY

Revision #: 5

This MSDS replaces the October 05, 1999 MSDS. Any changes in information are as follows: In Section 1

Date Prepared Section 1 Footnotes

In Section 9

(pH) (from) (pH) Comments

In Section 15

TSCA Status

NFPA CODES

Fire: 1 Health: 1 Reactivity: 0

HMIS CODES

Fire: 1 Health: 1 Reactivity: 0

#### MANUFACTURER DISCLAIMER:

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The information herein is believed to be accurate and is presented in good faith; however, no warranties or representations are made by HydroChem Industrial Services, Inc. regarding the accuracy or completeness of the information.

HydroChem Industrial Services, Inc. shall not be held liable for any damage resulting from the handling, or from contact with the above product.

## MATERIAL SAFETY DATA SHEET



Pago:

DATE PREPARED: 12/22/2000

MSDS No: M002

Caustic Soda, flake or bead

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: Caustic Soda, flake or bead

Product Code: M002

Product Name: Sodium Hydroxide

Chemical Family: Alkali Molecular Formula: NaOH

Generic Name: Caustic Soda , Lye Soda, Lye

MANUFACTURER:

HydroChem Industrial Services, Inc.

900 Georgia Ave. Deer Park, TX 77536

Customer Service: (800) 934-9376

24 HR. EMERGENCY TELEPHONE

NUMBERS:

Emergency Contact:

HydroChem ER

Emergency Phone

(800) 569-4889

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

wt.% CAS Registry #

Sodium Hydroxide

100 1310-73-2

## OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

EXPOSURE LIMITS

OSHA PEL ACGIH TLV

Supplier

Sodium Hydroxide

2 mg/m3 - 2 mg/m3 - STEL/ceiling

## 3. HAZARDS IDENTIFICATION

## EMERGENCY OVERVIEW

PHYSICAL APPEARANCE:

White powder

## IMMEDIATE CONCERNS:

Corrosive.

May react violently with water.

Do not get in eyes, on skin or clothing.

## MEDICAL CONDITIONS AGGRAVATED:

Persons with pre-existing skin disorders, eye problems or impaired pulmonary function may be at increased risk from exposure.



Page: 2 DATE PREPARED: 12/22/2000 MSDS No: M002

Caustic Soda, flake or bead

#### ROUTES OF ENTRY:

Ingestion, inhalation and eye or skin contact.

#### 4. FIRST AID MEASURES

#### EYES

Immediately flush eyes with water for 30 minutes while holding eyelids open. Seek medical attention.

#### SKIN:

Immediately wash with soap and water, Rinse for 30 minutes. See a doctor at once. Destroy contaminated shoes and clothing.

#### INGESTION:

DO NOT induce vomiting. Drink large quantities of milk (preferred) or water and give milk of magnesia. Take to hospital at once.

#### INHALATION:

If effects occur, remove to fresh air. See a doctor at once. If breathing has stopped, begin artificial respiration.

## 5. FIRE FIGHTING MEASURES

Flashpoint and Method: Not Applicable Flammable Limits: Not applicable Autoignition Temperature: None

#### EXTINGUISHING MEDIA:

Use alcohol foam, carbon dioxide, dry chemical or water spray when fighting fires involving this material.

#### OTHER CONSIDERATIONS:

Large amounts of heat generated when initially diluted with water.

## **EXPLOSION HAZARDS:**

May release hydrogen gas (explosive) when in contact with aluminum and similar metals.

#### FIRE FIGHTING EQUIPMENT:

As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective clothing to prevent contact with skin and eyes.



Fage: 3 DATE PREPARED: 12/22/2000 MSDS No: M002

Caustic Soda, flake or bead

## 6. ACCIDENTAL RELEASE MEASURES

#### GENERAL PROCEDURES:

Scoop into appropriate containers. Flush residual with plenty of water.

## 7. HANDLING AND STORAGE

## GENERAL PROCEDURES:

Refer to Section 8.

#### STORAGE:

No special precautions required. Avoid wetting.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### ENGINEERING CONTROLS:

Ventilation - General and local ventilation are required.

## PERSONAL PROTECTION

EYES AND FACE:

Chemical goggles required and an eye wash in work area.

## RESPIRATORY:

Use NIOSH approved respirator with dust and mist protection.

## PROTECTIVE CLOTHING:

Face shield, boots, protective suit and impervious (neoprene) gloves.

## OTHER USE PRECAUTIONS:

Safety shower and eye wash in the work area.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Powder

Color: White

pH: 13

Melting Point: 604°F 318°C Solubility in Water: Soluble Specific Gravity: 2.13 (water=1)



DATE PREPARED: 12/22/2000

MSDS No: M002

Caustic Soda, flake or bead

COMMENTS:

pH: pH listed above is for a 1% solution

#### 10. STABILITY AND REACTIVITY

STABLE: Yes

HAZARDOUS POLYMERIZATION: No ...

HAZARDOUS DECOMPOSITION:

None

#### INCOMPATIBLE MATERIALS:

Aluminum, magnesium, water, organic materials, acids, copper, organic halogens, zinc, tin, bronze, brass

#### 11. TOXICOLOGICAL INFORMATION

#### ACUTE

Eyes: Corrosive. Rapidly causes pain, burns, corneal injury. May cause permanent damage and blindness.

Skin: Corrosive. Rapidly causes pain, burns, redness, swelling and damage to tissue. Not likely to be absorbed in toxic amounts.

Ingestion: Corrosive. Causes pain and severe burns to mouth, throat and stomach.

Inhalation: Corrosive. Short exposure can injure lungs, throat, mucous membranes and reduce lung capacity. Causes pain, burns, choking, and coughing.

## TARGET ORGANS:

Skin, Eyes

## GENERAL COMMENTS:

Carcinogens: Not listed by IARC, USA NTP, or USA OSHA.

#### COMMENTS:

Only selected Registry of Toxic Effects of Chemical Substances (RTECS) data is presented in this document. See the actual entry in RTECS for complete information.

RTECS Number: WB4900000

## 12. ECOLOGICAL INFORMATION

## GENERAL COMMENTS:

Degradability: Not biodegradable.

Fish Toxicity: Low toxicity to fish (when neutralized) .



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DATE PREPARED: 12/22/2000

MSDS No: M002

Caustic Soda, flake or bead

## 13. DISPOSAL CONSIDERATIONS

## PRODUCT DISPOSAL:

Ship via permitted waste hauler to permitted hazardous waste disposal facility for landfilling.

#### EMPTY CONTAINER:

Send empty bags to sanitary landfill. Render other types of containers unuscable by puncturing or crushing and sending to a sanitary landfill unless prohibited by local regulations.

## RCRA/USEPA WASTE INFORMATION:

RCRA Hazardous Waste Number: D002 (corrosive), D003 (reactive)

## COMMENTS:

Always follow ALL applicable federal, state and local regulations.

## 14. TRANSPORT INFORMATION

## DOT (DEPARTMENT OF TRANSPORTATION)

Proper Shipping Name: Sodium Hydroxide, solid

Hazard Class: 8

NA/UN Number: UN1823

Packing Group: II

Reportable Quantity (RQ) Under CERCLA: 1000 lb

Placards: Corrosive - 8

## SPECIAL SHIPPING NOTES:

Material is a HAZARDOUS MATERIAL AND HAZARDOUS SUBSTANCE. Add the letters RQ to the beginning of the shipping description if the RQ amount is met or exceeded in a single container.

## 15. REGULATORY INFORMATION

DOT Label Symbol and Statement of Hazard



DOT Corrosive



Page: 6
DATE PREPARED: 12/22/2000
MSDS No: M002

Caustic Soda, flake or bead

#### UNITED STATES

## SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

Fire: No Pressure Generating: No Reactivity: No Acute: Yes Chronic: No

Title III Notes: This product contains no substances which are defined as toxic chemicals under the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (40 CFR Part 372).

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)
Reportable Spill Quantity: 1000 lb

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA Status: All components of this material are on the TSCA inventory.

#### STATE REGULATIONS

## PROPOSITION 65 STATEMENT:

This product does not contain any substance(s) which are defined by the state of California to cause cancer, birth defects, or other reproductive effects.

## 16. OTHER INFORMATION

## REASON FOR ISSUE:

Biannual review

Approved by: Charles M Maddin, PhD, FAIC

Approval date: 10/24/2000

#### REVISION SUMMARY

Revision #: 5

This MSDS replaces the October 19, 2000 MSDS. Any changes in information are as follows:

In Section 12

**Ecological Comments** 

NFPA CODES Fire: 0 H

Health: 3

Reactivity: 1

HMIS CODES

Fire: 0

Health: 3

Reactivity: 1

Protection: X



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DATE PREPARED: 12/22/2000
MSDS No: M002

Caustic Soda, flake or bead

## MANUFACTURER DISCLAIMER:

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The information herein is believed to be accurate and is presented in good faith; however, no warranties or representations are made by HydroChem Industrial Services, Inc. regarding the accuracy or completeness of the information.

HydroChem Industrial Services, Inc. shall not be held liable for any damage resulting from the handling, or from contact with the above product.



## **Material Safety Data Sheet**

The Dow Chemical Company

Product Name: PROPYL CELLOSOLVE(TM) SOLVENT

Issue Date: 06/06/2006 Print Date: 12 Jun 2006

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

## 1. Product and Company Identification

## **Product Name**

PROPYL CELLOSOLVE(TM) SOLVENT

#### **COMPANY IDENTIFICATION**

The Dow Chemical Company 2030 Willard H. Dow Center Midland, MI 48674 USA

**Customer Information Number:** 

800-258-2436

#### **EMERGENCY TELEPHONE NUMBER**

24-Hour Emergency Contact: Local Emergency Contact:

989-636-4400 989-636-4400

## 2. Hazards Identification

## **Emergency Overview**

Color: Colorless
Physical State: Liquid
Odor: mild, sweet
Hazards of product:

WARNING! Combustible liquid and vapor. Causes eye irritation. Harmful if absorbed through skin. May cause skin irritation. May be harmful if inhaled. Vapor explosion hazard. Vapors may travel a long distance; ignition and/or flash back may occur. Isolate area. Keep upwind of spill. Stay out of low areas.

## **OSHA Hazard Communication Standard**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

## Potential Health Effects

**Eye Contact:** May cause severe eye irritation. May cause moderate corneal injury. Effects may include pain, marked redness and swelling.

Skin Contact: Prolonged contact may cause skin irritation with local redness.

Skin Absorption: Prolonged or widespread skin contact may result in absorption of harmful amounts.

* Indicates a Trademark

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**Inhalation:** Prolonged excessive exposure may cause adverse effects. Excessive exposure may cause irritation to upper respiratory tract (nose and throat). Observations in animals include: Red-coloured urine.

Issue Date: 06/06/2006

**Ingestion:** Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

**Effects of Repeated Exposure:** In animals, effects have been reported on the following organs: blood (hemolysis) and secondary effects on the kidney and liver. Human red blood cells have been shown to be significantly less sensitive to hemolysis than those of rodents and rabbits.

Birth Defects/Developmental Effects: Has been toxic to the fetus in lab animals at doses toxic to the mother.

## 3. Composition Information

Component	CAS#	Amount
Ethylene glycol monopropyl ether	2807-30-9	> 99.0 %

## 4. First-aid measures

**Eye Contact:** Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

**Skin Contact:** Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing. Seek medical attention if symptoms occur or irritation persists. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

**Ingestion:** If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

**Notes to Physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

**Medical Conditions Aggravated by Exposure:** Excessive exposure may aggravate preexisting liver and kidney disease. Repeated excessive exposure may aggravate preexisting blood disease (anemia).

## 5. Fire Fighting Measures

**Extinguishing Media:** Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Eliminate ignition sources. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire

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from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

**Unusual Fire and Explosion Hazards:** Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur.

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

## 6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Small spills: Absorb with materials such as: Non-combustible material. Clay. Zorb-all®. Wash the spill site with large quantities of water. Large spills: Dike area to contain spill. Collect in suitable and properly labeled containers. Pump with explosion-proof equipment. If available, use foam to smother or suppress. See Section 13, Disposal Considerations, for additional information.

Personal Precautions: Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Isolate area. Keep unnecessary and unprotected personnel from entering the area. No smoking in area. Keep personnel out of low areas. Keep upwind of spill. Ventilate area of leak or spill. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Check area with combustible gas detector before reentering area. Ground and bond all containers and handling equipment. Vapor explosion hazard. Keep out of sewers. Refer to Section 7, Handling, for additional precautionary measures.

**Environmental Precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Material may float on water and any runoff may create an explosion or fire hazard if ignited.

## 7. Handling and Storage

#### Handling

**General Handling:** No smoking, open flames or sources of ignition in handling and storage area. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Electrically ground and bond all equipment. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation.

Other Precautions: Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

#### Storage

Minimize sources of ignition, such as static build-up, heat, spark or flame. Keep container closed. Store in the following material(s): Carbon steel. Stainless steel. Do not store in: Aluminum. Copper. Galvanized iron. Galvanized steel.

## 8. Exposure Controls / Personal Protection

List	Type	Value
Dow IHG	TWA	20 ppm SKIN
Dow IHG	STEL	60 ppm SKIN
	Dow IHG	Dow IHG TWA

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A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.

Issue Date: 06/06/2006

It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

#### **Personal Protection**

Eye/Face Protection: Use chemical goggles.

**Skin Protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber-("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use an approved air-purifying or positive-pressure supplied-air respirator depending on the potential airborne concentration. For emergency and other conditions where the exposure guideline may be exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. The following should be effective types of air-purifying respirators: Organic vapor cartridge.

**Ingestion:** Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

## **Engineering Controls**

**Ventilation:** Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

## 9. Physical and Chemical Properties

**Physical State** 

Color Odor

Flash Point - Closed Cup

Flammable Limits In Air

Autoignition Temperature Vapor Pressure

Boiling Point (760 mmHg) Vapor Density (air = 1)

Specific Gravity (H2O = 1)

Freezing Point Melting Point

Solubility in Water (by

weight) pH

Molecular Weight
Octanol/Water Partition

Coefficient

Liquid Colorless

mild, sweet 57 °C (135 °F) ASTM D93

Lower: 1.3 %(V) Literature

**Upper**: 15.8 %(V) Literature 235 °C (455 °F) Literature 1.6 mmHg @ 20 °C Literature 150 °C (302 °F) Literature .

3.6 Literature

0.912 20 °C/20 °C Literature -90 °C (-130 °F) Literature No test data available 100 % @ 20 °C

No test data available 104 g/mol Literature

0.08 Estimated

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**Evaporation Rate (Butyl** 

0.2 Literature

Acetate = 1)

**Dynamic Viscosity** 

2.7 cps @ 20 °C Literature

Issue Date: 06/06/2006

#### 10. Stability and Reactivity

## Stability/Instability

Thermally stable at typical use temperatures.

Conditions to Avoid: Do not distill to dryness. Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible Materials: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

### **Hazardous Polymerization**

Will not occur.

#### **Thermal Decomposition**

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Ketones. Organic acids.

#### 11. **Toxicological Information**

#### **Acute Toxicity**

Ingestion

LD50, Rat, male 3,089 mg/kg

Skin Absorption

LD50, Rat 876 mg/kg

LD50, Guinea pig 1,000 - 5,000 mg/kg

Inhalation

LC50, 6 h, Vapor, Rat, male > 2,132 ppm

#### Sensitization

Skin

Did not cause allergic skin reactions when tested in guinea pigs.

#### Repeated Dose Toxicity

In animals, effects have been reported on the following organs: blood (hemolysis) and secondary effects on the kidney and liver. Human red blood cells have been shown to be significantly less sensitive to hemolysis than those of rodents and rabbits.

## **Developmental Toxicity**

Has been toxic to the fetus in lab animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

#### 12. **Ecological Information**

## **CHEMICAL FATE**

#### **Movement & Partitioning**

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50).

Henry's Law Constant (H): 1.47E-8 atm*m3/mole; 25 °C Estimated Partition coefficient, n-octanol/water (log Pow): 0.08 Estimated

Partition coefficient, soil organic carbon/water (Koc): 1 Estimated

## Persistence and Degradability

Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%).

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#### Indirect Photodegradation with OH Radicals

Rate Constant	Atmosphe	ric Half-life	Method
2.16E-11 cm3/s			Estimated
Biological oxygen der	nand (BOD):		
BOD 5	BOD 10	BOD 20	BOD 28
13 %	66 %	100 %	

Chemical Oxygen Demand: 1.94 mg/mg Theoretical Oxygen Demand: 2.15 mg/mg

**ECOTOXICITY** 

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50 >100 mg/L in the most sensitive species tested).

**Fish Acute & Prolonged Toxicity** 

LC50, fathead minnow (Pimephales promelas): > 1,000 mg/l

**Aquatic Invertebrate Acute Toxicity** 

LC50, water flea Daphnia magna: > 5,000 mg/l Toxicity to Micro-organisms

EC50; bacteria, Growth inhibition: > 1,000 mg/l

## 13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. DOW HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Group at 1-800-258-2436 or 1-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details.

## 14. Transport Information

## **DOT Non-Bulk**

NOT REGULATED

#### **DOT Bulk**

Proper Shipping Name: FLAMMABLE LIQUID, NOS

Technical Name: ETHYLENE GLYCOL MONOPROPYL ETHER Hazard Class: 3 ID Number: UN 1993 Packing Group: PG III

#### **IMDG**

Proper Shipping Name: FLAMMABLE LIQUID, NOS

Technical Name: ÉTHYLENE GLYCOL MONOPROPYL ETHER Hazard Class: 3 ID Number: UN1993 Packing Group: PG III

EMS Number: F-E,S-E

#### ICAO/IATA

Proper Shipping Name: FLAMMABLE LIQUID, NOS

**Technical Name:** ETHYLENE GLYCOL MONOPROPYL ETHER **Hazard Class:** 3 **ID Number:** UN1993 **Packing Group:** PG III

Cargo Packing Instruction: 310
Passenger Packing Instruction: 309

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Issue Date: 06/06/2006

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

## 15. Regulatory Information

## **OSHA Hazard Communication Standard**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

# Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	Yes
Delayed (Chronic) Health Hazard	Yes
Fire Hazard	Yes
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

## Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Component	CAS#	Amount
Ethylene glycol monopropyl ether	2807-30-9	>= 99.0 %

# Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS#	Amount
Ethylene glycol monopropyl ether	2807-30-9	>= 99.0 %

# Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

## California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

#### **European Inventory of Existing Commercial Chemical Substances (EINECS)**

The components of this product are on the EINECS inventory or are exempt from inventory requirements.

## **US. Toxic Substances Control Act**

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

#### **CEPA - Domestic Substances List (DSL)**

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

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## 16. Other Information

#### **Product Literature**

Additional information on this product may be obtained by calling your Dow Chemical Company sales or customer service contact. Ask for a product brochure.

Issue Date: 06/06/2006

**Hazard Rating System** 

NFPA Health Fire Reactivity
2 2 0

## **Recommended Uses and Restrictions**

Dow recommends that you use this product in a manner consistent with the listed use. If your intended use is not consistent with Dow's stated use, please contact Dow's Customer Information Group. An oxygenated solvent - For industrial conversion as a raw material for manufacture of articles or goods. For industrial formulation for inclusion in a final product. For industrial use as a process aid. For industrial formulation as a process control material. For industrial consumption as a process raw material. For industrial consumption as a component of a reaction system.

#### Revision

Identification Number: 1982 / 1001 / Issue Date 06/06/2006 / Version: 4.1 Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

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## SECTION 1 - PRODUCT AND COMPANY INFORMATION

PPG Kansai Automotive Finishes (PKAF) 5875 New King Court Troy, MI 48098

EMERGENCY PHONE NUMBERS (412) 434-4515 (U.S.)

(24 hours/day):

(514) 645-1320 (Canada) 01-800-00-21-400 (Mexico) 0532-3889090 (China)

TECHNICAL

1-800-245-2590 (CLEVELAND, OH) 8:00 a.m. -

INFORMATION: 5:00 p.m. EST

PRODUCT SAFETY/MSDS INFORMATION: (412) 492-5555 7:00 a.m.

4:30 p.m. EST

Product ID:

CMS611 (0019-F1)

PRODUCT NAME:

CELLOSÒLVE ACETATE

SYNONYMS:

None

ISSUE DATE:

05/26/2005

**EDITION NO.:** 

SOLVENT

**CHEMICAL** FAMILY:

#### **EMERGENCY OVERVIEW:**

Combustible. Keep away from heat, sparks, flames, and other sources of ignition. Do not smoke.CAUSES EYE IRRITATION, MAY CAUSE SLIGHT SKIN IRRITATION, MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN. VAPOR AND/OR SPRAY MIST HARMFUL IF INHALED.HARMFUL IF SWALLOWED.

## **SECTION 2 - COMPOSITION INFORMATION**

The following ingredient(s) marked with an "x" are considered hazardous under applicable U.S. OSHA and/or Canadian WHMIS regulations. If no ingredients are listed, then there are no U.S. OSHA and/or Canadian WHMIS hazardous ingredients in this product.

Material/ **CAS Number**  Percent

Hazardous

2-ETHOXYETHYLACETATE

111-15-9

60-100

#### **SECTION 3 - HAZARDS IDENTIFICATION**

## **ACUTE OVEREXPOSURE EFFECTS**

### **EYE CONTACT:**

Causes eye irritation. Redness, itching, burning sensation and visual disturbances may indicate excessive eye contact.

## SKIN CONTACT:

May cause slight skin irritation. Dryness, itching, cracking, burning, redness, and swelling are conditions associated with excessive skin contact.

## SKIN ABSORPTION:

May be harmful if absorbed through the skin.

#### INHALATION:

Vapor and/or spray mist harmful if inhaled.

## INGESTION:

Harmful if swallowed.

#### SIGNS & SYMPTOMS OF OVEREXPOSURE:

Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Eye watering, headaches, nausea, dizziness and loss of coordination are indications that solvent levels are too high. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. Dryness, itching, cracking, burning, redness, and swelling are conditions associated with excessive skin contact.

#### MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Not applicable.

#### CHRONIC OVEREXPOSURE EFFECTS

Avoid long-term and repeated contact.

Repeated exposure to vapors above recommended exposure limits (see Section 8) may cause irritation of the respiratory system and permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. This product contains an ethyl and/or methyl derivative of an ethylene series glycol ether and/or acetate which has been shown to cause adverse effects on the kidneys, liver, blood and/or blood-forming tissues, birth defects, and reproductive organ damage.

The effects of long-term, low level exposures to this product have not been determined. Safe handling of this material on a long-term basis should emphasize the prevention of all contact with this material to avoid any effects from repetitive acute exposures. See Section 11, of this MSDS for a detailed list of chronic health effects information available on individual ingredients in this product.

#### **SECTION 4 - FIRST AID MEASURES**

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Material Safety Data Sheet information available. **EYE CONTACT:** 

Remove contact lens and pour a gentle stream of warm water through the affected eye for at least 15 minutes. If irritation persists, contact a poison control center, emergency room, or physician as further treatment may be necessary

#### SKIN CONTACT:

Run a gentle stream of water over the affected area for 15 minutes. A mild soap may be used if available. If any symptoms persist, contact a poison control center, emergency room, or physician as further treatment may be necessary.

#### INHALATION:

Remove from area to fresh air. If symptomatic, contact a poison control center, emergency room or physician for treatment information.

Gently wipe or rinse the inside of the mouth with water. Sips of water may be given if person is fully conscious. Never give anything by mouth to an unconscious or convulsing person. Do Not induce vomiting. Contact a poison control center, emergency room or physician right away as further treatment will be necessary.

## **SECTION 5 - FIRE FIGHTING MEASURES**

FLAMMABLE PROPERTIES

FLASHPOINT: 125 Degrees F ( 52 Degrees C)

FLASHPOINT TEST METHOD:

Pensky-Martens Closed Cup **UEL:** Not Available.

**LEL: 1.8** 

**AUTOIGNITION TEMPERATURE:** 

Not Available.

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#### PPG Kansai Automotive Finishes (PKAF) 5875 New King Court Troy, MI 48098

Product ID: CMS611 (0019-F1) PRODUCT NAME: CELLOSOLVE ACETATE

#### **EXTINGUISHING MEDIA:**

Use National Fire Protection Association (NFPA) Class B extinguishers (carbon dioxide, dry chemical, or universal aqueous film forming foam) designed to extinguish NFPA Class II combustible liquid fires. Water spray may be ineffective. Water spray may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat. PROTECTION OF FIREFIGHTERS:

Fire-fighters should wear self-contained breathing apparatus and full protective clothing.

#### UNUSUAL FIRE AND EXPLOSION HAZARDS:

Keep this product away from heat, sparks, flame, and other sources of ignition (i.e., pilot lights, electric motors, static electricity). Invisible vapors can travel to a source of ignition and flash back. Do not smoke while using this product. Keep containers tightly closed when not in use. Closed containers may explode when overheated. Do not apply to hot surfaces. Toxic gases may form when this product comes in contact with extreme heat. May produce hazardous decomposition products when exposed to extreme heat. Extreme heat includes, but is not limited to, flame cutting, brazing, and welding.

## SECTION 6 - ACCIDENTAL RELEASE MEASURE STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Provide maximum ventilation. Only personnel equipped with proper respiratory, skin, and eye protection should be permitted in the area. Remove all sources of ignition. Take up spilled material with sand, vermiculite, or other noncombustible absorbent material and place in clean, empty containers for disposal. Only the spilled material and the absorbant should be placed in this container.

#### **SECTION 7 - HANDLING AND STORAGE** PRECAUTIONS TO BE TAKEN DURING HANDLING AND STORAGE:

Vapors may collect in low areas. If this material is part of a multiple component system, read the Material Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts. Containers should be grounded when pouring. Avoid free fall of liquids in excess of a few inches STORAGE:

Do not store above 120 degrees F.(48 degrees C.). Store large quantities in buildings designed and protected for storage of NFPA Class II combustible liquids.

#### SECTION 8 - EXPOSURE CONTROLS & PERSONAL PROTECTION **ENGINEERING CONTROLS:**

Provide general dilution or local exhaust ventilation in volume and pattern to keep the concentration of ingredients listed in Section 8 below the lowest suggested exposure limits, the LEL below the stated limit, and to remove decomposition products during welding or flame cutting.

#### PERSONAL PROTECTIVE EQUIPMENT EYES:

Wear chemical-type splash goggles when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapors.

Wear protective clothing to prevent skin contact. Apron and gloves should be constructed of: butyl rubber. No specific permeation/degradation testing have been done on protective clothing for this product. Recommendations for skin protection are based on infrequent contact with this product. For frequent contact or total immersion, contact a manufacturer of protective clothing for appropriate chemical impervious equipment. Clean contaminated clothing and shoes.

#### RESPIRATOR:

Overexposure to vapors may be prevented by ensuring proper ventilation controls, vapor exhaust or fresh air entry. A NIOSH- approved air purifying respirator with the appropriate chemical cartridges or a positivepressure, air-supplied respirator may also reduce exposure. Read the respirator manufacturer's instructions and literature carefully to determine the type of airborne contaminants against which the respirator is effective, its limitations, and how it is to be properly fitted and used. Provide general dilution or local exhaust ventilation in volume and pattern to keep the concentration of ingredients listed in Section 2 below the lowest suggested exposure limits, the LEL below the stated limit, and to remove decomposition products during welding or flame cutting.
GENERAL HYGIENE - ESTABLISHED EXPOSURE LIMITS If Threshold Limit Values (TLVs) have been established by ACGIH, OSHA, Ontario or PPG, they will be listed below. These limits are intended for use in the practice of industrial hygiene as guidelines or recommendations in the control of potential workplace health hazards.

Material/ CAS Number	Percent	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL
2-	60- 100	S- 5 ppm		S- 100 ppm	
ETHOXYETHYLAC ETATE			established		established
111-15-9		L i			

These limits are not a relative index of toxicity and should not be used by

anyone without industrial hygiene training.

Key: OSHA=Occupational Safety and Health Administration; PEL=Permissable Exposure Limit; Ceiling=PEL Ceiling Limit; STEL=PEL Short-Term Exposure Limit: Skin=OSHA Skin Designation

Material/ CAS Number	Percent	Ontario TWA	Ontario STEL	PPG IPEL	PPG STEL
2-	60- 100	S- 5 ppm	Not	Not	10 PPM
ETHOXYETHYLAC			established	established	
ETATE			1		
111-15-9					

Kev: ACGIH=American Conference of Governmental Industrial Hygienists; OSHA=Occupational Safety and Health Administration; TLV=Threshold Limit Value; TWA=Time Weighted Average; PEL=Permissible Exposure Limit; IPEL=Internal Permissible Exposure Limit; Ceiling=TLV or PEL Ceiling Limit; STEL=TLV or PEL Short-Term Exposure Limit; Skin= Skin Absorption Designation. [C- Ceiling Limit; S-Potential Skin Aborption; R-Respirable Dust] Additional Information Not applicable.

## SECTION 9 - PHYSICAL & CHEMICAL PROPERTIES

(FORMULA VALUES, NOT SALES SPECIFICATIONS)

SPECIFIC GRAVITY: 975 PHYSICAL STATE: Liquid **Percent Solids:** .00

100.000 Percent Volatile by Volume: Not available. ODOR THRESHOLD: Not available.

Vapour Pressure: 1.2 mmHg ODOR/APPEARANCE: Non-viscous liquid with an odor

characteristic of the ingredients

listed in Section 2 **VAPOR DENSITY: HEAVIER THAN AIR Evaporation Rate:** 

**BOILING POINT OR RANGE:** 

313 - 320Degrees F Freezing Point or Range: Not Applicable. Melting Point or Range(°C): Not Applicable. Octanol/Water Partition Not Applicable.

Coefficient:

**WEIGHT PER GALLON:** 

8.1 (U.S.) / 9.75 (IMPERIAL)

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#### PPG Kansai Automotive Finishes (PKAF) 5875 New King Court Troy, MI 48098

Product ID: CMS611 (0019-F1) PRODUCT NAME: CELLOSOLVE ACETATÉ

**SECTION 10 - STABILITY AND REACTIVITY** 

This product is normally stable and will not undergo hazardous reactions. CONDITIONS TO AVOID:

None Known.

INCOMPATIBLE MATERIALS:

Avoid contact with strong alkalies, strong mineral acids, or strong oxidizing agents.

HAZARDOUS POLYMERIZATION:

None Known.

HAZARDOUS DECOMPOSITION PRODUCTS:

- Carbon monoxide - Carbon dioxide

	SECTION 11 - TOXICOLOGICAL INFORMATION
٠	ACUTE TOXICITY

Material/	Percent	ORAL	DERMAL	INHALATION
CAS Number		LD50 (g/kg)	LD50 (g/kg)	LC50 (mg/l)
2- ETHOXYETHYLAC ETATE 111-15-9	60- 100	3.90 g/kg	Not Available	16.23 mg/L. 4 h

#### CHRONIC TOXICITY

**Target Organs:** 

- Bone marrow and blood tissues - Blood - Kidney - Liver - Reproductive -Teratogen - Brain - Central nervous system - Lung

Mutagenicity Toxicity:
This has not been tested for this product.

Reproductive Toxicity:

This has not been tested for this product.

## SUPPLEMENTAL HEALTH INFORMATION:

Material/ CAS Number	Percent	Ingredient Specific Animal Data:
2- ETHOXYET HYLACETA TE 111-15-9		This product contains an ethylene series glycol ether and/or acetate which has been shown to cause adverse effects on the kidneys, liver, blood and/or blood-forming tissue.

SECTION 12 - ECOLOGICAL INFORMATION

POTENTIAL ENVIRONMENTAL EFFECTS

**Ecotoxicity:** 

No Information Available.

ENVIRONMENTAL FATE

Mobility:

No Information Available. No Information Available.

Biodegradation: Bioaccumulation:

No Information Available.

PHYSICAL/CHEMICAL

Hydrolysis: Photolysis:

No Information Available. No Information Available.

**SECTION 13 - DISPOSAL CONSIDERATIONS** 

Provide maximum ventilation, only personnel equipped with proper respiratory and skin and eye protection should be permitted in the area. Take up spilled material with sawdust, vermiculite, or other absorbent material and place in containers for disposal.

Waste material must be disposed of in accordance with federal, state, provincial and local environmental control regulations. Empty containers should be recycled by an appropriately licensed reconditioner/salvager or disposed of through a permitted waste management facility. Additional disposal information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

**SECTION 14 - TRANSPORTATION INFORMATION** 

Proper Shipping Name: NOS Technical Name:

NOT AVAILABLE NOT AVAILABLE

Hazard Class:

N.A.

Subsidiary Class(es):

N.A.

**UN Number:** Packing Group: N.A.

USA - RQ Hazardous Substances: NOT AVAILABLE

**USA-RQ Hazardous Substance** 

NOT AVAILABLE

Threshold Ship Weight:

Marine Pollutant Name:

NOT AVAILABLE

**SECTION 15 - REGULATORY INFORMATION** 

INVENTORY STATUS

U.S. TSCA: This product and/or all of its components are listed on the U.S. TSCA Inventory or is otherwise exempt from TSCA Inventory reporting requirements.
FEDERAL REGULATIONS

US Regulations

Material/ CAS Number	Percent	CERCLA HS -	SARA EHS- TPQ (LBS)	SARA 313
2- ETHOXYETHYLAC ETATE 111-15-9	60- 100	Not Listed	Not Listed	Not Listed

SARA 311/312

Health (acute): Yes Health (chronic): Yes Fire (flammable): Yes Pressure: No Reactivity: No

WHMIS HAZARD CLASS: - Class B, Division 3 - Class D, Division 2,

Subdivision A

## STATE/PROVINCIAL REGULATIONS

CALIFORNIA PROP. 65: WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Additional Information

Key: IARC- International Agency on the Research of Cancer; ACGIH-American Conference of Governmental Industrial Hygienists; NTP-National Toxicology Program *Denotes chemical as NTP Known Carcinogen; + Denotes NTP Possible Carcinogen;

Occupational Safety and Health Administration.

SECTION 16 - OTHER INFORMATION

**Hazard Rating Systems** NFPA Rating: 2 20 HMIS Rating: 2*20

Rating System: 0=Minimal, 1=Slight, 2=Moderate, 3=Serious, 4=Severe, *=Chronic Effects.

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#### PPG Kansai Automotive Finishes (PKAF) 5875 New King Court Troy, MI 48098

Product ID: CMS611 (0019-F1) PRODUCT NAME: CELLOSOLVE ACETATE

HMIS=Hazardous Materials Identification System; NFPA=National Fire Protection Association;

Safe handling of this product requires that all of the information on the MSDS be evaluated for specific work environments and conditions of use.

PREPARED BY: Product Safety Department REASON FOR REVISION: Date. Edition. Updated MSDS format.

This Material Safety Data Sheet has been prepared in accordance with Canada's Workplace Hazardous Materials Information System (WHMIS) and the OSHA Hazard Communication Standard (29 CFR 1910.1200), the supplier notification requirements of SARA Title III, Section 313 and other applicable right-to-know regulations.

Additional environmental information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG

representative.

CMS611 001001 (00168311.009)(05/31/05) 000315, 001, 0019

*** END OF MSDS ***

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## SIGMA-ALDRICH

## **Material Safety Data Sheet**

Version 3.0 Revision Date 07/14/2007 Print Date 09/06/2007

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name

: Citric acid

Product Number

251275

Brand

Sigma-Aldrich

Company

Sigma-Aldrich

3050 Spruce Street

SAINT LOUIS MO 63103

USA

Telephone

+1 800-325-5832

Fax

+1 800-325-5052

Emergency Phone #

(314) 776-6555

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula

C6H8O7

Molecular Weight

192.12 g/mol

CAS-No.	EC-No.	Index-No.	Concentration [%]
Citric acid			
77-92-9	201-069-1	-   -   -   -   -   -   -   -   -   -	

## 3. HAZARDS IDENTIFICATION

Emergency Overview OSHA Hazards Irritant

**HMIS Classification** 

Health Hazard: 2 Flammability: 0 Physical hazards: 0

NFPA Rating

Health Hazard: 2

Fire 0

Reactivity Hazard 0

## Potential Health Effects

Inhalation Skin May be harmful if inhaled. May cause respiratory tract irritation. May be harmful if absorbed through skin. May cause skin irritation.

Eyes

May cause eye irritation.

Ingestion

May be harmful if swallowed.

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Sigma-Aldrich Corporation www.sigma-aldrich.com

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#### 4. FIRST AID MEASURES

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

## In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

#### in case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### if swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

#### 5. FIRE-FIGHTING MEASURES

#### Flammable properties

Flash point

no data available

Ignition temperature

no data available

## Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

#### 6. ACCIDENTAL RELEASE MEASURES

## Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation.

## **Environmental precautions**

Do not let product enter drains.

### Methods for cleaning up

Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

## 7. HANDLING AND STORAGE

### Handling

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

#### Storage

Keep container tightly closed in a dry and well-ventilated place.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

## Personal protective equipment

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Hand protection

Handle with gloves.

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Sigma-Aldrich - 251275

## Eye protection

Safety glasses

## Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

#### Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

## **Appearance**

Form

solid

Colour

no data available

Safety data

pН

no data available

Melting point

155 - 157 °C (311 - 315 °F)

Boiling point

no data available

Flash point

no data available

Ignition temperature

no data available

Lower explosion limit

8 %(V)

,

Water solubility

no data available

## 10. STABILITY AND REACTIVITY

#### Storage stability

Stable under recommended storage conditions.

## Materials to avoid

Oxidizing agents, Bases, Reducing agents, Nitrates

## Hazardous decomposition products

Hazardous decomposition products formed under fire conditions.

Carbon oxides

## 11. TOXICOLOGICAL INFORMATION

## Acute toxicity

LD50 Oral - rat - 3,000 mg/kg

## Irritation and corrosion

Skin - rabbit - Mild skin irritation - 24 h

Eyes - rabbit - Severe eye irritation - 24 h

## Sensitisation

Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

## Chronic exposure

no data available

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#### Signs and Symptoms of Exposure

Vomiting, Diarrhoea, Damage to tooth enamel., Dermatitis, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### **Potential Health Effects**

Inhalation

May be harmful if inhaled. May cause respiratory tract irritation.

Skin

May be harmful if absorbed through skin. May cause skin irritation.

Eyes

May cause eye irritation.

Ingestion

May be harmful if swallowed.

#### 12. ECOLOGICAL INFORMATION

## Elimination information (persistence and degradability)

no data available

## **Ecotoxicity effects**

Toxicity to fish

LC50 - Leuciscus idus melanotus - 440 mg/l - 48 h

## Further information on ecology

no data available

## 13. DISPOSAL CONSIDERATIONS

#### **Product**

Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

## Contaminated packaging

Dispose of as unused product.

## 14. TRANSPORT INFORMATION

#### DOT (US)

Not dangerous goods

## **IMDG**

Not dangerous goods

## IATA

Not dangerous goods

## 15. REGULATORY INFORMATION

#### **OSHA Hazards**

Irritant

## **TSCA Status**

On TSCA Inventory

#### **DSL Status**

All components of this product are on the Canadian DSL list.

#### **SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### **SARA 313 Components**

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

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#### SARA 311/312 Hazards

Acute Health Hazard

## **Massachusetts Right To Know Components**

No Components Listed

#### Pennsylvania Right To Know Components

Citric acid

CAS-No. 77-92-9

**Revision Date** 

**New Jersey Right To Know Components** 

Citric acid

CAS-No. 77-92-9

Revision Date

Orato dold

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

## 16. OTHER INFORMATION

## **Further information**

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MSDS Number: C4092 * * * * * Effective Date: 04/02/07 * * * * * Supercedes: 08/10/04



From: Mallinckrodt Baker, Inc. 222 Red School Lane Phillipsburg, NJ 08865



24 Hour Emergency Telephone: 908-859-2151

CHEMTREC: 1-800-424-9300

National Response in Canada CANUTEC: 613-996-6666

Outside U.S. And Canada Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-900-582-2537) for assistance.

## **CHOLINE CHLORIDE**

## 1. Product Identification

Synonyms: Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride; biocolina; Hepacholine;

Lipotril; Choline Chlorhydrate.

CAS No.: 67-48-1

Molecular Weight: 139.63

Chemical Formula: HOCH2CH2N(CH3)3Cl

**Product Codes: 1582** 

## 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Choline Chloride	67-48-1	98 - 100%	Yes

## 3. Hazards Identification

**Emergency Overview** 

CAUTION! MAY BE HARMFUL IF SWALLOWED OR INHALED. MAY CAUSE

## IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

**SAF-T-DATA**(tm) Ratings (Provided here for your convenience)

Health Rating: 1 - Slight Flammability Rating: 1 - Slight Reactivity Rating: 0 - None Contact Rating: 2 - Moderate

Lab Protective Equip: GOGGLES; LAB COAT; PROPER GLOVES

Storage Color Code: Green (General Storage)

## **Potential Health Effects**

Information on the human health effects from exposure to this substance is limited.

## Inhalation:

No information found, but compound should be handled as a potential health hazard.

## Ingestion:

No information found, but compound should be handled as a potential health hazard.

## Skin Contact:

May cause irritation with redness and pain.

## **Eye Contact:**

May cause irritation, redness and pain.

## **Chronic Exposure:**

No information found.

## **Aggravation of Pre-existing Conditions:**

No information found.

## 4. First Aid Measures

#### Inhalation:

Remove to fresh air. Get medical attention for any breathing difficulty.

#### Ingestion:

Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice.

## **Skin Contact:**

Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation develops.

## **Eve Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists.

## 5. Fire Fighting Measures

#### Fire:

As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source.

## **Explosion:**

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

## Fire Extinguishing Media:

Water spray, dry chemical, alcohol foam, or carbon dioxide.

## **Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

## 6. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.

## 7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

## 8. Exposure Controls/Personal Protection

## **Airborne Exposure Limits:**

None established.

## **Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation*, *A Manual of Recommended Practices*, most recent edition, for details.

## Personal Respirators (NIOSH Approved):

For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R

or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

## **Skin Protection:**

Wear protective gloves and clean body-covering clothing.

## **Eye Protection:**

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

## 9. Physical and Chemical Properties

## Appearance:

White crystals.

Odor:

Slight amine odor.

Solubility:

Soluble in water.

**Specific Gravity:** 

No information found.

pH:

Aqueous solution is neutral or slightly acid.

% Volatiles by volume @ 21C (70F):

0

**Boiling Point:** 

No information found.

**Melting Point:** 

244 - 247C (471 - 477F)

Vapor Density (Air=1):

No information found.

Vapor Pressure (mm Hg):

No information found.

**Evaporation Rate (BuAc=1):** 

No information found.

## 10. Stability and Reactivity

## Stability:

Stable under ordinary conditions of use and storage.

## **Hazardous Decomposition Products:**

May produce carbon monoxide, carbon dioxide, nitrogen oxides and hydrogen chloride when heated to decomposition.

## **Hazardous Polymerization:**

Will not occur.

## **Incompatibilities:**

Strong oxidizers.

**Conditions to Avoid:** 

Heat, flames, ignition sources and incompatibles.

## 11. Toxicological Information

Oral rat LD50: 3400 mg/kg Investigated as a mutagen.

\Cancer List	s\			
		NTP	Carcinogen	
Ingredient		Known	Anticipated	IARC Category
~				
Choline Chloride (67	-48-1)	No	No	None

## 12. Ecological Information

Environmental Fate: No information found. Environmental Toxicity: No information found.

## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. Transport Information

Not regulated.

## 15. Regulatory Information

Chemical Inventory Status - Part 1\				
Ingredient	TSCA	EC	Japan	Australia
	~			
Choline Chloride (67-48-1)	Yes	Yes	Yes	Yes

\Chemical Inventory Status - Part 2\				
Ingredient	Korea		ada NDSL	Phil.
Choline Chloride (67-48-1)	Yes	Yes		Yes
\Federal, State & International Regulati				313
Ingredient RQ	TPQ	List	Chemi	cal Catg.
Choline Chloride (67-48-1) No		No		ло 10
\Federal, State & International Regulati		art-2\- RCRA-		
Ingredient CERCL	A 2	61.33	8 (d	)
Choline Chloride (67-48-1) No		10		- <b>-</b>
Chemical Weapons Convention: No TSCA 12(b): SARA 311/312: Acute: Yes Chronic: No Fire: Reactivity: No (Pure / Solid)				

Australian Hazchem Code: None allocated.

Poison Schedule: None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

## 16. Other Information

NFPA Ratings: Health: 1 Flammability: 1 Reactivity: 0

Label Hazard Warning:

CAUTION! MAY BE HARMFUL IF SWALLOWED OR INHALED. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

## **Label Precautions:**

Avoid breathing dust.

Avoid contact with eyes, skin and clothing.

Keep container closed.

Use with adequate ventilation.

Wash thoroughly after handling.

## Label First Aid:

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. If inhaled, remove to fresh air. Get medical attention for any breathing difficulty. Get medical attention if irritation develops or persists.

## **Product Use:**

Laboratory Reagent.

## **Revision Information:**

MSDS Section(s) changed since last revision of document include: 3.

Disclaimer:
*************************************

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Prepared by: Environmental Health & Safety Phone Number: (314) 654-1600 (U.S.A.)



## **M**aterial Safety Data Sheet

Catalog Number: 204269 Revision date: 25-Apr-2006

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY INFORMATION

Catalog Number: 204269

Product name: CETYL ALCOHOL

Synonyms: 1-Hexadecanol; Adol; Alcohol C-16; Hexadecyl Alcohol; Palmityl Alcohol

Supplier:

MP Biomedicals, LLC 29525 Fountain Parkway

Solon, OH 44139 tel: 440-337-1200

Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Components
CETYL ALCOHOL

CAS Number 36653-82-4

Weight % 90 - 100%

ACGIH Exposure Limits: None **OSHA Exposure Limits:** 

None

3. HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW:** May cause skin irritation and/or dermatitis

Principle routes of exposure: Skin

Inhalation: May cause irritation of respiratory tract

Ingestion: May be harmful if swallowed.
Skin contact: May cause allergic skin reaction

Eye contact: Avoid contact with eyes

Statements of hazard MAY CAUSE ALLERGIC SKIN REACTION.

**Statement of Spill or Leak - ANSI Label** Eliminate all ignition sources. Absorb and/or contain spill with inert materials (e.g., sand, vermiculite). Then place in appropriate container. For large spills, use water spray to disperse vapors, flush spill area. Prevent runoff from entering waterways or sewers.

## 4. FIRST AID MEASURES

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Inhalation: Move to fresh air. Call a physician immediately.

Skin contact: Rinse immediately with plenty of water and seek medical advice

Ingestion: Do not induce vomiting without medical advice.

Eye contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Protection of first-aiders: No information available

Medical conditions aggravated by exposure: None known

Catalog Number: 204269

Product name: CETYL ALCOHOL

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## 5. FIRE FIGHTING MEASURES

Suitable extinguishing media:

Specific hazards: Unusual hazards:

Special protective equipment for firefighters:

Flammable

None known

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent)

Use dry chemical, CO2, water spray or "alcohol" foam

and full protective gear

Water mist may be used to cool closed containers.

Not determined Not determined

Specific methods:

Flash point:

Autoignition temperature:

NFPA rating:

NFPA Health: NFPA Flammability:

NFPA Reactivity:

0

0 0

## 6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Environmental precautions: Methods for cleaning up:

Use personal protective equipment. Prevent product from entering drains.

Sweep up and shovel into suitable containers for disposal.

## 7. HANDLING AND STORAGE

Storage:

**ROOM TEMPERATURE** 

Handling:

Use only in area provided with appropriate exhaust

ventilation.

Safe handling advice:

Incompatible products:

Wear personal protective equipment.

Oxidising and spontaneously flammable products

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: Breathing apparatus only if aerosol or dust is formed.

Hand protection: Pvc or other plastic material gloves

Skin and body protection: Usual safety precautions while handling the product will provide adequate protection against

this potential effect.

Eye protection: Safety glasses with side-shields

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.



## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:

Formula:

Melting point/range: Boiling point/range:

Density:

Vapor pressure: **Evaporation rate:** Vapor density:

Catalog Number: 204269

Solid

C16H34O 54-56°C

179-181°C at 10 mm No data available

3.06 x 10-6 mm Hg at 30 °C

No data available No data available

Product name: CETYL ALCOHOL

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MP Biomedicals, LLC

www.mpbio.com

Solubility (in water):

Flash point:

Autoignition temperature:

insoluble

Not determined Not determined

## 10. STABILITY AND REACTIVITY

Stability:

Polymerization:

Hazardous decomposition products:

Stable under recommended storage conditions.

None under normal processing.

Thermal decomposition can lead to release of irritating

gases and vapours such as carbon oxides.

Materials to avoid:

Strong oxidising agents

Strong acids

Conditions to avoid:

Exposure to air or moisture over prolonged periods.

## 11. TOXICOLOGICAL INFORMATION

**Product Information** 

Acute toxicity Components CETYL ALCOHOL

RTECS Number:

MM0225000

Selected LD50s and LC50s

Oral LD50 Rat: 5 gm/kg Oral LD50 Mouse: 3200 mg/kg Dermal LD50 Rabbit: >2600 mg/kg

Chronic toxicity:

Chronic exposure may cause nausea and vomiting, higher exposure causes

unconsciousness.

Local effects:

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and

vomiting.

Specific effects:

May include moderate to severe erythema (redness) and moderate edema (raised

skin), nausea, vomiting, headache.

Primary irritation:

Carcinogenic effects:

Mutagenic effects: Reproductive toxicity: No data is available on the product itself.

No data is available on the product itself. No data is available on the product itself. No data is available on the product itself.

## 12. ECOLOGICAL INFORMATION

Mobil ity:

Bioaccumulation: Ecotoxicity effects:

Aquatic toxicity:

No data available No data available

No data available

May cause long-term adverse effects in the aquatic

environment.

Compo ments

U.S. DOT - Appendix B -

Marine Pollutan

Not Listed

U.S. DOT - Appendix B -

Severe Marine Pollutants

Not Listed

United Kingdom - The Red

List: Not Listed

Comportents

Germany VCI (WGK)

World Health Organization Ecotoxicity - Fish Species

CETYL ALCOHOL

CETYL ALCOHOL

Not Listed

(WHO) - Drinking Water

Data

Not Listed

Not Listed

Compon ents

**Ecotoxicity - Freshwater** 

Algae Data

**Ecotoxicity - Microtox Data Ecotoxicity - Water Flea** 

Data

CETYL A LCOHOL

Not Listed

Not Listed

Not Listed

Catalog Number: 204269

Product name: CETYL ALCOHOL

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Components

**EPA - ATSDR Priority List** 

**EPA - HPV Challenge Program Chemical List**  California - Priority Toxic **Pollutants** 

CETYL ALCOHOL

CETYL ALCOHOL

Not Listed

indicator 4; Fully and ICCA

Not Listed

sponsored

Components

California - Priority Toxic Pollutants

Not Listed

California - Priority Toxic Pollutants

Not Listed

## 13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished

with this material may be hazardous.

Contaminated packaging:

Do not re-use empty containers

## 14. TRANSPORT INFORMATION

UN/Id No:

Not regulated

DOT:

Proper shipping name:

Not Regulated

Components

U.S. DOT - Appendix A Table 1 - Reportable Quantities

CETYL ALCOHOL

Not Listed

TDG (Canada):

WHMIS hazard class:

Non-controlled

IMDG/IMO

**IMDG - Hazard Classifications** 

Not Applicable

Components

U.S. DOT - Appendix B - Marine Pollutan U.S. DOT - Appendix B - Severe Marine

**Pollutants** 

**CETYL ALCOHOL** 

Not Listed

Not Listed

#### IMO-labels:

## 15. REGULATORY INFORMATION

## International Inventories

Components **CETYL ALCOHOL** 

Inventory - United States TSCA - Sect. 8(b)

Present

Canada DSL Inventory List -

Present

Australia (AICS):

Present

Catalog Number: 204269

**Product name: CETYL ALCOHOL** 

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Inventory - China: EU EINECS List -Inventory - Japan:

Korean KECL: Philippines PICCS: Present

253-149-0; C16H34O

2-217; 2-3704 KE-18460 Present

U.S. regulations:

Components

California Proposition 65 Massachusetts Right to

Know List:

New Jersey Right to

Know List:

Pennsylvania Right to Know

List:

CETYL ALCOHOL

Not Listed

Not Listed

Not Listed

Not Listed

Components

Florida substance List:

Rhode Island Right to Know List:

Illinois - Toxic Air Contaminants Connecticut - Hazardous Air

CETYL ALCOHOL

Not Listed

Not Listed

Contaminants
Not Listed

Pollutants
Not Listed

Components

SARA 313 Emission reporting/Toxic Release

CERCLA/SARA - Section NTP: 302 Extremely Haz

IARC:

of Chemicals

Not Listed

Not Listed

None

None

SARA 313 Notification:

CETYL ALCOHOL

The above is your notification as to the SARA 313 listing for this product(s) pursuant to Section 313 of Title III of the Superfund Ammendments and Reauthorization Act of 1986 and 40 CFR Part 372.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2499 (in Washington, DC or Alaska).

State Notification:

The above information is your notice as to the Right-to-Know listings of the stated product(s). Individual states will list chemicals for a variety of reasons including, but not limited to, the compounds toxicity; carcinogenic, tumorigenic and/or reproductive hazards; and the compounds environmental impact if accidentally released.

## **16. OTHER INFORMATION**

Prepared by: Health & Safety

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**End of Safety Data Sheet** 

Catalog Number: 204269

Product name: CETYL ALCOHOL

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## **MATERIAL SAFETY DATA SHEET**



Bayer Material Science LLC Product Safety & Regulatory Affairs 100 Bayer Road

Pittsburgh, PA 15205-9741

USA

TRANSPORTATION EMERGENCY

CALL CHEMTREC:

(800) 424-9300

INTERNATIONAL:

(703) 527-3887

NON-TRANSPORTATION

Bayer Emergency Phone: Bayer Information Phone: (412) 923-1800

(800) 662-2927

1. Product and Company Identification

**Product Name:** 

CARADOL SC 56-20

Material Number:

3606612

**Chemical Family:** 

Polyether Polyol

**Chemical Name:** 

Poly (Oxyalkylene) Polymer

2. Hazards Identification

**Emergency Overview** 

Color: Clear Form: liquid viscous Odor: Mild.

Product poses little or no hazard if spilled. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Irritating gases/fumes may be given off during burning or thermal decomposition.

**Potential Health Effects** 

Primary Routes of Entry:

Skin Contact, Eye Contact

Medical Conditions Aggravated by

None known.

Exposure:

**HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE** 

**General Effects of Exposure Acute Effects of Exposure** 

For Product: CARADOL SC 56-20

Not expected to cause any adverse acute health effects.

Chronic Effects of Exposure For Product: <u>CARADOL SC 56-20</u>

Not expected to cause any adverse chronic health effects.

Carcinogenicity:

No Carcinogenic substances as defined by IARC, NTP and/or OSHA

Material Name: CARADOL SC 56-20

Article Number: 3606612

Page: 1 of 6 Report Version: 1.8

## 3. Composition/Information on Ingredients

#### **Hazardous Components**

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

## 4. First Aid Measures

#### **Eye Contact**

In case of contact, flush eyes with plenty of lukewarm water. Get medical attention if irritation develops.

#### Skin Contact

In case of skin contact, wash affected areas with soap and water. Thoroughly clean shoes before reuse. Wash clothing before reuse. Get medical attention if irritation develops and persists.

#### Inhalation

If inhaled, remove to fresh air. If breathing is difficult, give oxygen. Get medical attention if irritation develops.

#### Ingestion

If ingested, do not induce vomiting unless directed to do so by medical personnel. Get medical attention.

## 5. Fire-Fighting Measures

Suitable Extinguishing Media:

carbon dioxide (CO2), dry chemical, foam, water spray for large

fires

## **Special Fire Fighting Procedures**

Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes. Use cold water spray to cool fire-exposed containers to minimize risk of rupture. Toxic and irritating gases/fumes may be given off during burning or thermal decomposition.

## 6. Accidental release measures

#### Spill and Leak Procedures

Dike or dam spilled material and control further spillage, if possible. Cover spill with inert material (e. g., dry sand or earth) and collect for proper disposal. Collect and place in appropriately marked sealable containers for disposal. Wash spill area with soap and water.

## 7. Handling and Storage

**Storage Temperature:** 

minimum: maximum: 20 °C (68 °F)

60 °C (140 °F)

Material Name: CARADOL SC 56-20

Article Number: 3606612

Page: 2 of 6 Report Version: 1.8

## Storage Period

36 Months

**Handling/Storage Precautions** 

Handle in accordance with good industrial hygiene and safety practices. Wash thoroughly after handling. Keep container closed when not in use. Material is hygroscopic and may absorb small amounts of atmospheric moisture. If contamination with isocyanates is suspected, do not reseal containers. Avoid inhalation of vapour or mist.

## 8. Exposure Controls / Personal Protection

Country specific exposure limits have not been established or are not applicable

#### Industrial Hygiene/Ventilation Measures

Under normal conditions of use, special ventilation is not required.

#### **Respiratory Protection**

None required under normal conditions of use., NIOSH approved air-supplied respirator during die cleaning, high temperature processing or when thermal decomposition is suspected.

#### **Hand Protection**

Permeation resistant gloves., Butyl rubber gloves., Nitrile rubber gloves., Neoprene gloves

#### **Eve Protection**

safety glasses with side-shields.

#### Skin and body protection

No special skin protection requirements during normal handling and use.

## **Additional Protective Measures**

Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees in the safe use and handling of this product.

## 9. Physical and chemical properties

Form:

liquid viscous

Appearance: Color:

Clear

Odor:

Mild

pH:

Approximately 7

**Freezing Point:** 

<-8.89 °C (< 16 °F)

**Boiling Point/Range:** 

No Data Available > 93.33 °C (> 200 °F)

Flash Point: Vapor Pressure:

< 0.001 mmHg @ 25 °C (77 °F)

**Specific Gravity:** 

Approximately 1.01 - 1.05

Solubility in Water:

Slightly Soluble

Viscosity, Dynamic:

Approximately 540 - 1,233 cP @ 20 °C (68 °F)

**Bulk Density:** 

8.428 - 8.762 lb/gal

Molecular Weight:

2,000

Hygroscopicity:

hygroscopic

Material Name: CARADOL SC 56-20

Article Number: 3606612

Page: 3 of 6 Report Version: 1.8

## 10. Stability and Reactivity

#### **Hazardous Reactions**

Hazardous polymerization does not occur.

## Stability

Stable

#### Materials to avoid

oxidizing agents, Isocyanates

#### Hazardous decomposition products

By Fire and Thermal Decomposition: Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), dense black smoke, Other undetermined compounds

## 11. Toxicological Information

No information available.

## 12. Ecological Information

No information available.

## 13. Disposal considerations

## Waste Disposal Method

Waste disposal should be in accordance with existing federal, state and local environmental control laws.

## **Empty Container Precautions**

Recondition or dispose of empty container in accordance with governmental regulations. Empty containers retain product residue; observe all precautions for product. Do not heat or cut container with electric or gas torch.

## 14. Transportation information

## **Land transport (DOT)**

Non-Regulated

## Sea transport (IMDG)

Non-Regulated

## Air transport (ICAO/IATA)

Non-Regulated

## 15. Regulatory Information

## **United States Federal Regulations**

Material Name: CARADOL SC 56-20

Article Number: 3606612

Page: 4 of 6 Report Version: 1.8

**OSHA Hazcom Standard Rating:** 

Non-Hazardous

**US. Toxic Substances Control Act:** 

Listed on the TSCA Inventory.

US. EPA CERCLA Hazardous Substances (40 CFR 302):

**Components** 

None

#### SARA Section 311/312 Hazard Categories:

Non-hazardous under Section 311/312

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):

Components

None

# US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required: Components

None

# US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261):

If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

#### State Right-To-Know Information

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

#### Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:

Weight %

**Components** 

CAS-No.

99 - 100%

Polyether Polyol

9082-00-2

### California Prop. 65:

To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.

#### 16. Other Information

NFPA 704M Rating

TALKITY O HAND TEMPORAL				
Health	0			
Flammability	1			
Reactivity	0			
Other				

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

#### **HMIS** Rating

Material Name: CARADOL SC 56-20 Article Number: 3606612

Page: 5 of 6 Report Version: 1.8

Health	0
Flammability	1
Physical Hazard	0

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

The method of hazard communication for Bayer MaterialScience LLC is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by Bayer MaterialScience LLC as a customer service.

Contact Person:

**Product Safety Department** 

Telephone:

(412) 777-2835

MSDS Number:

R302460 02/10/2007

Version Date: Report Version:

1.8

This information is furnished without warranty, express or implied. This information is believed to be accurate to the best knowledge of Bayer MaterialScience LLC. The information in this MSDS relates only to the specific material designated herein. Bayer MaterialScience LLC assumes no legal responsibility for use of or reliance upon the information in this MSDS.

Material Name: CARADOL SC 56-20

Article Number: 3606612

Page: 6 of 6 Report Version: 1.8

^{* =} Chronic Health Hazard

Printing date 03/26/2007

Reviewed on 01/26/2007

#### 1 Identification of substance:

Product details:

Product name: Calcium stearate

Stock number: 39423

Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Emergency Phone: (978) 521-6300

CHEMTREC: (800) 424-9300 Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency information:

During normal hours the Health, Safety and Environmental Department.

After normal hours call Chemtrec at (800) 424-9300.

### 2 Composition/Data on components:

Chemical characterization:

Description: (CAS#)

calcium stearate (CAS# 1592-23-0); 100%

Identification number(s): EINECS Number: 216-472-8

#### 3 Hazards identification

Hazard description: Not applicable

Information pertaining to particular dangers for man and environment

Not applicable

Classification system NFPA Ratings (scale 0-4)



Health = 0 Fire = 0 Reactivity = 0

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)



Health (acute effects) = 1
Flammability = 1
Reactivity = 1

# 4 First aid measures

### ${\tt After\ inhalation}$

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

#### After skin contact

Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.

### After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

(Contd. on page 2)

- USA

# SUNCOAST CHEMICALS, INC

# MATERIAL SAFETY DATA SHEET

CAPTOBAN 3X OIL BASE (Triple Strength Concentrate)



Printing date 08/28/2006

Reviewed on 08/25/2006

#### 1 Identification of substance:

Product details:

Product name: Calcium hydroxide

Stock number: 14662 Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Emergency Phone: (978) 521-6300

CHEMTREC: (800) 424-9300 Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency information:

During normal hours the Health, Safety and Environmental Department.

After normal hours call Chemtrec at (800) 424-9300.

# 2 Composition/Data on components:

Chemical characterization:

Description: (CAS#)

Calcium hydroxide (CAS# 1305-62-0): 100%

Identification number(s): EINECS Number: 215-137-3

#### 3 Hazards identification

#### Hazard description:



C Corrosive

Information pertaining to particular dangers for man and environment  $\it R$  34 Causes burns.

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)



Health (acute effects) = 2Flammability = 0Reactivity = 1

#### 4 First aid measures

#### General information

Immediately remove any clothing soiled by the product.

#### After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

#### After skin contact

Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.

(Contd. on page 2)

USA

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Calcium hydroxide

(Contd. of page 1)

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.

#### 5 Fire fighting measures

Suitable extinguishing agents

CO2, sand, extinguishing powder. Do not use water.

For safety reasons unsuitable extinguishing agents Water

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Metal oxide fume

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

#### 6 Accidental release measures

#### Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

### 7 Handling and storage

#### Handling

Information for safe handling:

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

The product is not flammable

#### Storage

Requirements to be met by storerooms and receptacles:

No special requirements.

Information about storage in one common storage facility:

Do not store together with acids.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

- USA

(Contd. on page 3)

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Calcium hydroxide

(Contd. of page 2)

#### 8 Exposure controls and personal protection

 $m\alpha/m3$ 

#### Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Calcium hydroxide

	mg/	III J
ACGIH TLV	5	
Austria MAK	5	
Belgium TWA	5	
Denmark TWA	5	
Finland TWA	5	
France VME	5	
Korea TLV	5	
Norway TWA	- 5	
Poland TWA	2	1
Switzerland MAK-W	5	•
United Kingdom	5-	-LTEL
USA PEL	5	(respirable fraction)
	15	(total dust)

Additional information: No data

#### Personal protective equipment

#### General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

### Breathing equipment:

Use suitable respirator when high concentrations are present.

#### Protection of hands:

Check protective gloves prior to each use for their proper condition. Impervious gloves

#### Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

#### Eye protection:

Safety glasses

Tightly sealed goggles

Full face protection

Body protection: Protective work clothing.

# 9 Physical and chemical properties:

General Information	
Form:	Powder
Color:	White
Odor:	Odorless

Change in condition

Melting point/Melting range: 580°C (1076°F)
Boiling point/Boiling range: Not determined

(Contd. on page 4)

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Calcium hydroxide

						(Contd.	of p	oage	3)
Sub	limation temperature /	start:	Not	determined					
Flash p	ooint:		Not	applicable					
Ignitio	on temperature:		Not	determined	-				
Decompo	osition temperature:		Not	determined					
Danger	of explosion:			duct does not losion hazard.	-	an		!	
Explos: Lowe Uppe			2.00	determined determined	:				
Vapor p	ressure:		Not	determined					
Density	r at 20°C (68°F):	:	2.2	4 g/cm³	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	

### 10 Stability and reactivity

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided: Acids

Dangerous reactions No dangerous reactions known Dangerous products of decomposition: Metal oxide fume

#### 11 Toxicological information

#### Acute toxicity:

LD/LC50 values	that are rel	evant for classification:
Oral	LD50	7300 mg/kg (mus)
		7340 mg/kg (rat)
Irritation of ey	yes severe	10 mg (rbt)

#### Primary irritant effect:

#### on the skin:

Corrosive effect on skin and mucous membranes.

Irritant to skin and mucous membranes.

#### on the eye:

Strong corrosive effect.

Irritating effect.

Sensitization: No sensitizing effects known.

Other information (about experimental toxicology):

Mutagenic effects have been observed on tests with laboratory animals.

#### Subacute to chronic toxicity:

Corrosive materials are acutely destructive to the respiratory tract, eyes, skin and digestive tract. Eye contact may result in permanent damage and complete vision loss. Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis. May cause coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Ingestion may cause damage to the mouth, throat and esophagus. May cause skin burns or irritation depending on the severity of the exposure.

(Contd. on page 5)

- USA

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Calcium hydroxide

(Contd. of page 4)

Additional toxicological information:

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

### 12 Ecological information:

#### General notes:

Do not allow material to be released to the environment without proper governmental permits.

#### 13 Disposal considerations

Recommendation

Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

# 14 Transport information

#### DOT regulations:



Hazard class:

Identification number:

UN3262

Packing group:

III

Proper shipping name (technical

name):

Labe1

CORROSIVE SOLID, BASIC, INORGANIC,

N.O.S. (calcium hydroxide)

Land transport ADR/RID (cross-border)



ADR/RID class:

8 (C6) Corrosive substances

Danger code (Kemler):

80

**UN-Number:** 

3262

Packaging group:

III

Description of goods:

3262 CORROSIVE SOLID, BASIC, INORGANIC,

N.O.S. (calcium hydroxide)

(Contd. on page 6)

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Calcium hydroxide

(Contd. of page 5)

#### Maritime transport IMDG:



IMDG Class: 8 **UN Number:** 3262 Label 8 Packaging group: III

Proper shipping name: CORROSIVE SOLID, BASIC, INORGANIC,

N.O.S. (calcium hydroxide)

#### Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 8 UN/ID Number: 3262 Label 8 Packaging group: III

CORROSIVE SOLID, BASIC, INORGANIC, Proper shipping name:

N.O.S. (calcium hydroxide)

### 15 Regulations

#### Product related hazard informations:

#### Hazard symbols:

C Corrosive

#### Risk phrases:

34 Causes burns.

#### Safety phrases:

20 When using do not eat or drink.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

45 In case of accident or if you feel unwell, seek medical advice immediately.

This material and its container must be disposed of as hazardous 60 waste.

#### National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

#### Information about limitation of use:

For use only by technically qualified individuals.

(Contd. on page 7)

"USA

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Calcium hydroxide

(Contd. of page 6)

#### 16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department. Contact: Darrell R. Sanders

- USA ·

# Material Safety Data Sheet Calcium chloride

ACC# 03900

# Section 1 - Chemical Product and Company Identification

MSDS Name: Calcium chloride

Catalog Numbers: AC219170000, AC219170010, AC219170025, AC219170250,

AC219175000, AC297150000, AC297150250, AC297155000, AC300380000, AC300380010, AC300380025, AC300382500, AC349610000, AC349610250,

AC349615000, S71923, S71924, S73000, S73046, S799422, S93162, C614-10, C614-3,

C614-500, C77-212, C77-500, NC9297837, NC9830185

Synonyms: Calpus; Caltac; Dowflake; Liquidow; Peladow; Snowmelt; Superflake

anhydrous.

# **Company Identification:**

Fisher Scientific 1 Reagent Lane Fair Lawn, NJ 07410

For information, call: 201-796-7100 Emergency Number: 201-796-7100

Tor CHEMTREC assistance, call: 800-424-9300

. or International CHEMTREC assistance, call: 703-527-3887

# Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
10043-52-4	Calcium chloride	>96	233-140-8

# Section 3 - Hazards Identification

#### **EMERGENCY OVERVIEW**

Appearance: white solid.

**Warning!** May be harmful if swallowed. May cause severe respiratory and digestive tract irritation with possible burns. May cause severe eye and skin irritation with possible burns. May cause cardiac disturbances. Hygroscopic (absorbs moisture from the air).

Target Organs: Eyes.

### **Potential Health Effects**

Eye: Contact with eyes may cause severe irritation, and possible eye burns.

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**Skin:** Contact with skin causes irritation and possible burns, especially if the skin is wet or moist.

**igestion:** May cause severe gastrointestinal tract irritation with nausea, vomiting and possible burns. May cause cardiac disturbances. May be harmful if swallowed. In very severe cases, seizures, rapid respiration, slow heartbeat, or death, may

**Inhalation:** May cause severe irritation of the upper respiratory tract with pain, burns, and inflammation.

**Chronic:** Effects may be delayed.

# Section 4 - First Aid Measures

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

**Skin:** Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

**Ingestion:** Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid. **Inhalation:** Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.

Notes to Physician: Treat symptomatically and supportively.

# Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. **Extinguishing Media:** Use extinguishing media most appropriate for the surrounding fire.

Flash Point: Not applicable.

**Autoignition Temperature:** Not applicable. **Explosion Limits, Lower:** Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 2; Flammability: 0; Instability: 0

# Section 6 - Accidental Release Measures

Ceneral Information: Use proper personal protective equipment as indicated in Section

**Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section.

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Avoid generating dusty conditions. Provide ventilation.

# Section 7 - Handling and Storage

**Handling:** Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Keep container tightly closed. Do not get on skin or in eyes. Do not ingest or inhale. Wash clothing before reuse. Always use cool water when dissolving calcium chloride. Heat evolved is significant.

**Storage:** Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture.

# Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

# **Exposure Limits**

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Calcium chloride	none listed	none listed	none listed

**OSHA Vacated PELs:** Calcium chloride: No OSHA Vacated PELs are listed for this chemical.

# **Personal Protective Equipment**

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear impervious gloves.

**Clothing:** Wear appropriate protective clothing to minimize contact with skin. **Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

# Section 9 - Physical and Chemical Properties

Physical State: Solid pearance: white

dor: odorless
pH: Not available.

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Vapor Pressure: Not available.
Vapor Density: Not available.

raporation Rate: Not available.

Viscosity: Not available.

**Boiling Point:** 1600 deg C @ 760 mmHg **Freezing/Melting Point:** 782 deg C

**Decomposition Temperature:**Not available.

Solubility: Soluble.

Specific Gravity/Density: 2.1500 g/cm3

Molecular Formula:CaCl2 Molecular Weight:110.99

# Section 10 - Stability and Reactivity

Chemical Stability: Stable.

**Conditions to Avoid:** Dust generation, excess heat, exposure to moist air or water.

Incompatibilities with Other Materials: Bromine trifluoride, Furan-2-peroxycarboxylic

acid, Solutions attack some metals...

Hazardous Decomposition Products: Hydrogen chloride, calcium oxide.

Hazardous Polymerization: Will not occur.

# Section 11 - Toxicological Information

RTECS#:

CAS# 10043-52-4: EV9800000

LD50/LC50:

CAS# 10043-52-4:

Oral, mouse: LD50 = 1940 mg/kg; Oral, rabbit: LD50 = 1384 mg/kg;

Oral, rat: LD50 = 1 gm/kg;

**Carcinogenicity:** 

CAS# 10043-52-4: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No information found **Teratogenicity:** No information found

Reproductive Effects: No information found

**Mutagenicity:** Mutagenic effects have occurred in experimental animals.

eurotoxicity: No information found

ther Studies:

# Section 12 - Ecological Information

No information available.

# Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed. RCRA U-Series: None listed.

# Section 14 - Transport Information

1 - 1 - 10 - 10 - 10 - 10 - 10 - 10 - 1	US DOT	Canada TDG
Shipping Name:	Not Regulated	Not Regulated
Hazard Class:		
UN Number:		•
Packing Group:		

# Section 15 - Regulatory Information

# **US FEDERAL**

# **TSCA**

CAS# 10043-52-4 is listed on the TSCA inventory.

# **Health & Safety Reporting List**

None of the chemicals are on the Health & Safety Reporting List.

### **Chemical Test Rules**

None of the chemicals in this product are under a Chemical Test Rule.

#### Section 12b

None of the chemicals are listed under TSCA Section 12b.

# **TSCA Significant New Use Rule**

None of the chemicals in this material have a SNUR under TSCA.

# **CERCLA Hazardous Substances and corresponding RQs**

None of the chemicals in this material have an RQ.

# **\RA Section 302 Extremely Hazardous Substances**

None of the chemicals in this product have a TPQ.

# **SARA Codes**

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CAS # 10043-52-4: immediate, delayed, reactive.

**Section 313** No chemicals are reportable under Section 313.

### ean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

### Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

### OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

#### STATE

CAS# 10043-52-4 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

# California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

# European/International Regulations European Labeling in Accordance with EC Directives Hazard Symbols:

XI

# ...sk Phrases:

R 36 Irritating to eyes.

# **Safety Phrases:**

S 22 Do not breathe dust.

S 24 Avoid contact with skin.

# WGK (Water Danger/Protection)

CAS# 10043-52-4: 0

# Canada - DSL/NDSL

CAS# 10043-52-4 is listed on Canada's DSL List.

### Canada - WHMIS

This product has a WHMIS classification of D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

**Canadian Ingredient Disclosure List** 

# Section 16 - Additional Information

**MSDS Creation Date:** 12/12/1997 **Revision #7 Date:** 6/06/2006

The information above is believed to be accurate and represents the best information currently available to so. However, we make no warranty of merchantability or any other warranty, express or implied, with spect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

Printing date 03/26/2007

Reviewed on 01/26/2007

Product name: Calcium stearate

After swallowing Seek medical treatment.

(Contd. of page 1)

#### 5 Fire fighting measures

#### Suitable extinguishing agents

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

#### Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

#### 6 Accidental release measures

#### Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

#### Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting: Pick up mechanically.

#### Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

#### 7 Handling and storage

#### Handling

#### Information for safe handling:

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

No special precautions are necessary if used correctly.

Information about protection against explosions and fires:

No special measures required.

#### Storage

Requirements to be met by storerooms and receptacles:

No special requirements.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

# 8 Exposure controls and personal protection

#### Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

#### Components with limit values that require monitoring at the workplace:

Stearates

mg/m3
ACGIH TLV 10
Ireland TWA 10
Netherlands TWA 10

(Contd. on page 3)

USA

Printing date 03/26/2007

Reviewed on 01/26/2007

Product name: Calcium stearate

(Contd. of page 2)

Additional information: No data

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be

followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands: Impervious gloves

Eye protection: Safety glasses

Body protection: Protective work clothing.

### 9 Physical and chemical properties:

Form:	Powder
Color:	White
Odor:	Odorless
Change in condition	
Melting point/Melting range:	179~180°C (354-356°F)
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined
Flash point:	Not applicable
Flammability (solid, gaseous)	Product is not flammable.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not determined
Density:	Not determined
Solubility in / Miscibility with	
Water;	Insoluble

#### 10 Stability and reactivity

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided: Oxidizing agents

Dangerous reactions Reacts with oxidizing agents

Dangerous products of decomposition: Carbon monoxide and carbon dioxide

(Contd. on page 4)

Printing date 03/26/2007

Reviewed on 01/26/2007

Product name: Calcium stearate

(Contd. of page 3)

### 11 Toxicological information

#### Acute toxicity:

LD/LC50 val	lues that	are relevant for classification:	
Oral	LD50	>10000 mg/kg (mus)	
		>10000 mg/kg (rat)	
Inhalative	LC50/4H	>1241 mg/m3/4H (mam)	

Primary irritant effect:

on the skin: May cause irritation on the eye: Powder: irritant effect

Sensitization: No sensitizing effects known.

Subacute to chronic toxicity:

The toxicity of calcium compounds is generally due to the anion. Toxicity, as indicated by the LC50 and LD50 data is low. Product may have irritating effects at lower exposure levels.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.

#### 12 Ecological information:

#### General notes:

Do not allow material to be released to the environment without proper governmental permits.

# 13 Disposal considerations

#### Product:

#### Recommendation

Consult state, local or national regulations to ensure proper disposal.

#### Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

### 14 Transport information

Not a hazardous material for transportation.

DOT regulations:
Hazard class: None

Land transport ADR/RID (cross-border)

ADR/RID class: None

Maritime transport IMDG:

IMDG Class:

None

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: None

#### Transport/Additional information:

Not dangerous according to the above specifications.

(Contd. on page 5)

Printing date 03/26/2007

Reviewed on 01/26/2007

Product name: Calcium stearate

(Contd. of page 4)

#### 15 Regulations

#### Product related hazard informations:

Observe the general safety regulations when handling chemicals

#### National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

#### Information about limitation of use:

For use only by technically qualified individuals.

#### 16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department. Contact: Darrell R. Sanders

USA

### HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** 

**CALCIUM BROMIDE** 

**Revision Date:** 

02-Jan-2007

# CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Trade Name:** 

**CALCIUM BROMIDE** 

Synonyms:

None

**Chemical Family:** 

Inorganic Salt

Application:

Additive

Manufacturer/Supplier

Baroid Drilling Fluids

a Product Service Line of Halliburton Energy Services, Inc.

P.O. Box 1675 Houston, TX 77251

Telephone: (281) 871-4000

Emergency Telephone: (281) 575-5000

Prepared By

Chemical Compliance

Telephone: 1-580-251-4335

#### **COMPOSITION/INFORMATION ON INGREDIENTS**

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Calcium bromide	7789-41-5	60 - 100%	Not applicable	Not applicable

#### HAZARDS IDENTIFICATION

**Hazard Overview** 

May cause eye, skin, and respiratory irritation.

#### FIRST AID MEASURES

Inhalation

If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation

develops or if breathing becomes difficult.

Skin

Wash with soap and water. Get medical attention if irritation persists. Remove

contaminated clothing and launder before reuse.

Eyes

In case of contact, or suspected contact, immediately flush eyes with plenty of water

for at least 15 minutes and get medical attention immediately after flushing.

Ingestion

Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek

medical attention. Never give anything by mouth to an unconscious person.

**Notes to Physician** 

Not Applicable

**CALCIUM BROMIDE** Page 1 of 5

# 5. FIRE FIGHTING MEASURES

Flash Point/Range (F): Flash Point/Range (C): Flash Point Method: Not Determined Not Determined Not Determined

Autoignition Temperature (F):
Autoignition Temperature (C):

Not Determined Not Determined

Flammability Limits in Air - Lower (%): Flammability Limits in Air - Upper (%):

Not Determined Not Determined

Fire Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Special Exposure Hazards

Decomposition in fire may produce toxic gases.

Special Protective Equipment for Full protective clothing and approved self-contained breathing apparatus required for

Full protective elething and enpressed celf conte

Fire-Fighters

fire fighting personnel.

NFPA Ratings: HMIS Ratings:

Health 1, Flammability 0, Reactivity 0 Flammability 0, Reactivity 0, Health 1

### 6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment. Avoid creating and breathing dust.

**Environmental Precautionary** 

None known.

Measures

Procedure for Cleaning /

Absorption

Scoop up and remove.

### 7. HANDLING AND STORAGE

**Handling Precautions** 

Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Wash

hands after use.

**Storage Information** 

Store in a cool, dry location.

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls** 

A well ventilated area to control dust levels.

**Respiratory Protection** 

Dust/mist respirator. (95%)

**Hand Protection** 

Impervious rubber gloves.

**Skin Protection** 

Normal work coveralis.

**Eye Protection** 

Wear safety glasses or goggles to protect against exposure.

Other Precautions

Eyewash fountains and safety showers must be easily accessible.

# 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical State:** 

Solid

Color:

White Odorless

pH:

Not Determined

Specific Gravity @ 20 C (Water=1):

3.35

Density @ 20 C (lbs./gallon): Bulk Density @ 20 C (lbs/ft3): Not Determined Not Determined

CALCIUM BROMIDE Page 2 of 5 PHYSICAL AND CHEMICAL PROPERTIES

1490 **Boiling Point/Range (F):** 810 Boiling Point/Range (C):

Not Determined Freezing Point/Range (F): Not Determined Freezing Point/Range (C): Not Determined Vapor Pressure @ 20 C (mmHg): Not Determined

Vapor Density (Air=1): **Percent Volatiles:** 

Not Determined Evaporation Rate (Butyl Acetate=1):

Solubility in Water (g/100ml):

15 Solubility in Solvents (g/100ml): Not Determined VOCs (lbs./gallon): Not Determined Viscosity, Dynamic @ 20 C (centipoise): Not Determined Viscosity, Kinematic @ 20 C (centistrokes): Not Determined Partition Coefficient/n-Octanol/Water: Not Determined

Molecular Weight (g/mole):

STABILITY AND REACTIVITY 10.

**Stability Data:** Stable

**Hazardous Polymerization:** Will Not Occur

**Conditions to Avoid** None known.

Incompatibility (Materials to

Avoid)

Contact with water. Potassium.

n

Not Determined

**Hazardous Decomposition** 

**Products** 

Hydrogen bromide.

**Additional Guidelines** 

Not Applicable

TOXICOLOGICAL INFORMATION

**Principle Route of Exposure** Eye or skin contact, inhalation.

Inhalation May cause respiratory irritation.

**Skin Contact** May cause skin irritation.

**Eye Contact** May cause severe eye irritation.

Ingestion Irritation of the mouth, throat, and stomach. May cause abdominal pain, vomiting,

nausea, and diarrhea.

**Aggravated Medical Conditions** Skin disorders.

Chronic Effects/Carcinogenicity Repeated excessive ingestion may cause central nervous system effects.

Other Information None known.

**Toxicity Tests** 

**Oral Toxicity:** LD50: 4000 mg/kg (Rat)

**Dermal Toxicity:** Not determined

Inhalation Toxicity: Not determined

**Primary Irritation Effect:** Not determined

> **CALCIUM BROMIDE** Page 3 of 5

Carcinogenicity

Not determined

Genotoxicity:

Not determined

Reproductive /

Ames Test: Negative

**Developmental Toxicity:** 

### 12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)

Not determined

Persistence/Degradability

Not determined

Bio-accumulation

Not Determined

### **Ecotoxicological Information**

**Acute Fish Toxicity:** 

Not determined

Acute Crustaceans Toxicity: Not determined

Not determined

Acute Algae Toxicity:

Not determined

Other Information

Not applicable

#### ____

**Chemical Fate Information** 

**Disposal Method** 

Disposal should be made in accordance with federal, state, and local regulations.

**Contaminated Packaging** 

Follow all applicable national or local regulations.

### 14. TRANSPORT INFORMATION

**DISPOSAL CONSIDERATIONS** 

### **Land Transportation**

DOT

Not restricted

Canadian TDG

Not restricted

**ADR** Not restricted

**Air Transportation** 

ICAO/IATA Not restricted

Sea Transportation

**IMDG** Not restricted

**Other Shipping Information** 

Labels:

None

#### 15. REGULATORY INFORMATION

CALCIUM BROMIDE Page 4 of 5

# 15. REGULATORY INFORMATION

**US Regulations** 

**US TSCA Inventory** 

All components listed on inventory.

**EPA SARA Title III Extremely Hazardous Substances** 

Not applicable

EPA SARA (311,312) Hazard

Acute Health Hazard

Class

**EPA SARA (313) Chemicals** 

This product does not contain a toxic chemical for routine annual "Toxic Chemical

Release Reporting" under Section 313 (40 CFR 372).

**EPA CERCLA/Superfund** 

Not applicable.

Reportable Spill Quantity For This

**Product** 

**EPA RCRA Hazardous Waste** 

Classification

If product becomes a waste, it does NOT meet the criteria of a hazardous waste as

defined by the US EPA.

California Proposition 65

All components listed do not apply to the California Proposition 65 Regulation.

MA Right-to-Know Law

Does not apply.

NJ Right-to-Know Law

Does not apply.

PA Right-to-Know Law

Does not apply.

**Canadian Regulations** 

**Canadian DSL Inventory** 

All components listed on inventory.

**WHMIS Hazard Class** 

D2B Toxic Materials

### 16. OTHER INFORMATION

# The following sections have been revised since the last issue of this MSDS

Not applicable

**Additional Information** 

For additional information on the use of this product, contact your local Halliburton

representative.

For questions about the Material Safety Data Sheet for this or other Halliburton

products, contact Chemical Compliance at 1-580-251-4335.

**Disclaimer Statement** 

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

***END OF MSDS***

CALCIUM BROMIDE Page 5 of 5 MSDS 242-7

# TEXAS AROMATICS, LP MATERIAL SAFETY DATA SHEET C12 DISTILLATE BLENDSTOCK **SEPTEMBER 14, 2007**

# SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: C12 DISTILLATE BLENDSTOCK

CHEMICAL NAME:

Alkenes, C11-13, C12 Rich

CAS# 68526-58-9

CHEMICAL FAMILY:

Higher Olefins, Dodecenc. Fetrolcum hydrocarbon

PRODUCT DESCRIPTION:

Liquid with characteristic odor containing predominantly C12 olefin isomers.

**Emergency Phone Number:** 

CHEMTREC (800) 424-9300

(713)520-2900

Texas Aromatics, LP

3555 Timmons Lane, Suite 700

Houston, TX 77027

# SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

The composition of this mixture may be proprietary information. In the event of a medical emergency, compositional information will be provided to a physician or nurse. This product is hazardous as defined in 29 CFR1910.1200, based on the following compositional information:

OSHA HAZARD	COMPONENT	
Combustible		

#### SECTION 3 HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

Page: 1/8

#### EYE CONTACT:

Slightly irritating but does not injure eye tissue.

#### SKIN CONTACT:

Occasional brief contact with the liquid will not result in significant irritation unless evaporation is impeded. Frequent or prolonged contact may irritate. Low order of toxicity.

#### INHALATION:

Low order of toxicity.

Vapor concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic and may have other central nervous system effects.

#### INGESTION:

Small amounts of the liquid aspirated into the respiratory system during ingestion, or from vomiting, may cause bronchiopneumonia or pulmonary edema.

Minimal toxicity.

### **SECTION 4 FIRST AID MEASURES**

#### **EYE CONTACT:**

Flush eyes with large amounts of water until irritation subsides. If irritation persists, get medical attention.

#### SKIN CONTACT:

Flush with large amounts of water; use soap if available.

#### INHALATION:

Using proper respiratory protection, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest. Call for prompt medical attention.

#### INGESTION:

If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

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# SECTION 5 FIRE-FIGHTING MEASURES

FLASH POINT:

39 Deg C. METHOD; ASTM D-93, PMCC, Procedure A

FLAMMABLE LIMITS: AUTOIGNITION TEMP.; NOTE: Not Available NOTE: Not Available

#### **GENERAL HAZARD**

Combustible Liquid, can form combustible mixtures at temperatures at or above the flashpoint.

Static Discharge, material can accumulate static charges which can cause an incendiary electrical discharge.

"Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner, or properly disposed of.

#### FIRE FIGHTING

Use water spray to cool fire exposed surfaces and to protect personnel. Isolate "fuel" supply from fire.

Use foam, dry chemical, or water spray to extinguish fire.

Avoid spraying water directly into storage containers due to danger of boilover.

### **DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS**

No unusual

# SECTION 6 ACCIDENTAL RELEASE MEASURES

#### LAND SPILL

Eliminate sources of ignition. Prevent additional discharge of material, if possible to do so without hazard. For small spills implement cleanup procedures; for large spills implement cleanup procedures and, if in public area, keep public away and advise authorities. Also, if this product is subject to CERCLA reporting (see Section 15 REGULATORY INFORMATION) notify the National Response Center.

Prevent liquid from entering sewers, watercourses, or low areas. Contain spilled liquid with sand or earth. Do not use combustible materials such as sawdust.

Page: 3/8

Recover by pumping (use an explosion proof or hand pump) or with a suitable absorbent.

Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

#### WATER SPILL

Eliminate sources of ignition. Warn occupants and shipping in surrounding and downwind areas of fire and explosion hazard and request all to stay clear.

Remove from surface with suitable adsorbents. If allowed by local authorities and environmental agencies, sinking and/or suitable dispersants may be used in non-confined waters.

Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

#### SECTION 7 STORAGE AND HANDLING

#### **ELECTROSTATIC ACCUMULATION HAZARD**

Yes, use proper bonding and/or grounding procedure. Additional information regarding safe handling of products with static accumulation potential can be ordered by contacting the American Petrolaum Institute (API) for API Recommended Fractice 2003, entitled "Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents" (American Petroleum Institute, 1220 L Street Northwest, Washington, DC 20005), or the National Fire Protection Association (NFPA) for NFFA 77 entitled "Static Electricity" (National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101).

STORAGE TEMPERATURE Deg F:

Ambient

LOADING/UNLOADING TEMPERATURE Deg F:

Ambient

STORAGE/TRANSPORT PRESSURE mmHa:

Atmospheric

LOADING/UNLOADING VISCOSITY cSt:

1.9

#### STORAGE AND HANDLING:

Keep container closed. Handle and open containers with carc. Store in a cool, well ventilated place away from incompatible materials. Do NOT handle or store near an open flame, heat or other sources of ignition. Protect material from direct sunlight. Material will accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or grounding procedures.

Page: 4/8

Do NOT pressurize, cut, heat, or weld containers. Empty product containers may contain product residue. Do NOT reuse empty containers without commercial cleaning or reconditioning.

# SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

#### **EXPOSURE CONTROLS**

The use of mechanical dilution ventilation is recommended whenever this product is used in a confined space, is heated above ambient temperatures, or is agitated.

#### **PERSONAL PROTECTION**

For open systems where contact is likely, wear safety glasses with side shields, long sleeves, and chemical resistant gloves.

Where contact may occur, wear safety glasses with side shields.

Where concentrations in air may exceed the limits given in this Section and engineering, work practice or other means of exposure reduction are not adequate, NIOSH approved respirators may be necessary to prevent overexposure by inhalation.

# SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

SPECIFIC GRAVITY at Deg F: VAPOR PRESSURE, mmHg at Deg F: SOLUBILITY IN WATER, wt. % at Deg F: VISCOSITY OF LIQUID, cSt at Deg F: SP. GRAV. OF VAPOR, at 1 atm (Air=1): FREEZING/MELTING POINT, Deg F: EVAPORATION RATE, n-Bu Acetate=1: BOILING POINT, Deg F: 0.77 at 68 < 51.68 at 100 Insoluble 1.9 at 68 5.81 -148 Less Than 0.1 356 to 424

### SECTION 10 STABILITY AND REACTIVITY

#### STABILITY:

Stable

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#### HAZARDOUS POLYMERIZATION:

Will not occur

#### CONDITIONS TO AVOID HAZARDOUS POLYMERIZATION:

Not Applicable

#### MATERIALS AND CONDITIONS TO AVOID INCOMPATIBILITY:

Strong oxidizing agents, inorganic acids, halogenated compounds, halogens, molten sulfur.

#### HAZARDOUS DECOMPOSITION PRODUCTS:

None

### SECTION 11 TOXICOLOGICAL INFORMATION

Please refer to Section 3 for available information on potential health effects.

### SECTION 12 ECOLOGICAL INFORMATION

No specific ecological data are available for this product. Please refer to Section 6 for information regarding accidental releases and Section 15 for regulatory reporting information.

### SECTION 13 DISPOSAL CONSIDERATIONS

Please refer to Sections 5, 6 and 15 for disposal and regulatory information.

### SECTION 14 TRANSPORT INFORMATION

**DEPARTMENT OF TRANSPORTATION (DOT):** 

Page: 6/6

DOT SHIPPING DESCRIPTION: Combustible liquid, N.O.S., (C12 olefins), Combustible liquid, NA 1993, PG III. International shipping: Flammable liquid, N.O.S., (C12 olefins), 3, NA 1993, PG III (for all sizes of containers).

## SECTION 15 REGULATORY INFORMATION

#### TSCA:

This product is listed on the TSCA Inventory as a UVCB (Unknown, Variable Composition or Biological) Chemical at CAS Registry Number 68526-58-9

#### CERCLA:

If this product is accidentally spilled, it is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act. We recommend you contact local authorities to determine if there may be other local reporting requirements.

#### SARA TITLE III:

Under the provisions of Title Ill, Sections 311/312 of the Superfund Amendments and Reauthorization Act, this product is classified into the following hazard categories:

Fire.

This information may be subject to the provisions of the Community Right-to-Know Reporting Requirements (40 CFR 370) if threshold quantity criteria are met.

This product does not contain Section 313 Reportable Ingredients.

#### SECTION 16 OTHER INFORMATION

#### NOTES:

1. Air exposure must be minimized to limit build up of peroxides which will concentrate in bottoms if product is distilled.

Product must not be distilled to dryness if peroxide concentration is substantially above 10 ppm as active exygen since explosive decomposition may occur. Distillate must be immediately inhibited in line from condenser to minimize peroxide formation.

If product is to be distilled washing with aqueous ferrous ammonium sulphate will destroy peroxides but the product must be immediately re-inhibited.

INTERNATIONAL PACKAGE CLASSIFICATION: Flammable liquid, N.O.S., (C12

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olefins), 3, NA 1993, PG 11I (for all sizes of containers).

#### **HAZARD RATING SYSTEMS:**

This information is for people trained in:
National Paint & Coatings Association's (NFCA)
Hazardous Materials Identification System (HMIS)
National Fire Protection Association (NFPA 704)
Identification of the Fire Hazards of Materials

* .	NPCA-HMIS	NFPA 704	KEY
HEALTH	2	1 .	4 = Severe
FLAMMABILITY	7 2	2	3 = Serious
REACTIVITY	.1	1	2 = Moderate
			1 = Slight
			0 = Minimal

CAUTION: HMIS ratings are based on a 0-4 rating scale with 1 representing minimal hazards or risks, and 4 representing significant bazards or risks. Recommended HMIS ratings should not be used in the absence of a fully implemented HMIS hazard communication program.

This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. Nowever, no representation, warranty or quarantee is made as to its accuracy, reliability or completeness. It is the users responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

This information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not secept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

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Catalog Number: 150539 Revision date: 26-Apr-2006

### IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY INFORMATION

Catalog Number: 150539

Product name: BUTYRIC ACID ETHYL ESTER

Supplier:

MP Biomedicals, LLC 29525 Fountain Parkway Solon, OH 44139 tel: 440-337-1200

Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

#### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Components

**CAS Number** 105-54-4

Weight %

**ACGIH Exposure Limits:** 

None

**OSHA Exposure Limits:** 

None

BUTYRIC ACID ETHYL ESTER

90 - 100%

# 3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Harmful by inhalation, in contact with skin and if swallowed., Flammable

Category of Danger: Harmful, Flammable

Principle routes of exposure: Skin Inhalation: Harmful by inhalation. Ingestion: Harmful if swallowed.

Skin contact: Harmful in contact with skin. Eye contact: Risk of serious damage to eyes

Statements of hazard HARMFUL IF SWALLOWED. MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR

INHALED. Flammable

Statement of Spill or Leak - ANSI Label Eliminate all ignition sources. Absorb and/or contain spill with inert materials (e.g., sand, vermiculite). Then place in appropriate container. For large spills, use water spray to disperse vapors, flush spill area. Prevent runoff from entering waterways or sewers.

Statement of First Aid In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Call a physician if symptoms occur.

Precautions - ANSI Label Avoid prolonged contact with eyes, skin and clothing. Wash thoroughly after handling. Do not breathe vapors or spray mist Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling.

#### 4. FIRST AID MEASURES

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Catalog Number: 150539

Product name: BUTYRIC ACID ETHYL ESTER

Page 1 of 6

MP Biomedicals, LLC www.mpbio.com

Inhalation: Move to fresh air. Call a physician immediately.

Skin contact: Rinse immediately with plenty of water for at least 15 minutes Remove and wash contaminated clothing

before re-use Consult a physician

Ingestion: Do not induce vomiting without medical advice.

Eye contact: Rinse immediately with plenty of water, also under the eyelids. Rinse immediately with plenty of water, also

under the eyelids, for at least 15 minutes.

Protection of first-aiders: No information available

Medical conditions aggravated by exposure: None known

#### 5. FIRE FIGHTING MEASURES

Suitable extinguishing media:

Specific hazards:

Unusual hazards:

Specific methods:

Special protective equipment for firefighters:

Use dry chemical, CO2, water spray or `alcohol` foam.

Burning produces irritant fumes.

None known

Wear self contained breathing apparatus for fire fighting if

necessary. In the event of fire and/or explosion do not

breathe fumes.

Water mist may be used to cool closed containers.

Not determined 463 °C (865 °F)

Autoignition temperature: NFPA rating:

Flash point:

NFPA Health:

NFPA Flammability:

NFPA Reactivity:

2

#### 6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

**Environmental precautions:** 

Methods for cleaning up:

Use personal protective equipment.

Prevent product from entering drains.

Ground and bond containers when transferring material

#### 7. HANDLING AND STORAGE

Storage:

**ROOM TEMPERATURE** 

Handling:

Use only in area provided with appropriate exhaust

ventilation.

Safe handling advice:

Wear personal protective equipment. Remove and wash

contaminated clothing before reuse.

Technical measures/storage conditions:

Keep containers tightly closed in a cool, well-ventilated place. Keep container tightly closed in a dry and well-

ventilated place. Keep away from open flames, hot surfaces

and sources of ignition

Incompatible products:

Oxidising and spontaneously flammable products

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation, especially in confined areas.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

Hand protection: Pvc or other plastic material gloves

Skin and body protection: Impervious clothing Long sleeved clothing

Eye protection: If splashes are likely to occur, wear: Safety glasses with side-shields

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.

Catalog Number: 150539

Product name: BUTYRIC ACID ETHYL ESTER

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#### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance and Odor** 

Physical state:

Formula:

Molecular weight: Melting point/range: Boiling point/range:

Density:

Vapor pressure:

**Evaporation rate:** Vapor density: Solubility (in water):

Flash point:

Autoignition temperature:

Colorless; pineapple-like odor

Liquid C6H12O2 116.2

-101 °C; -93 °C 120-121 °C

0.879 at 20 °C (water = 1). 11.3 mm Hg at 20 °C 20 mm Hg at 28 °C

No data available 4.0 (air = 1)

Slightly soluble Not determined 463 °C (865 °F)

#### 10. STABILITY AND REACTIVITY

11. TOXICOLOGICAL INFORMATION

Stability:

Polymerization:

Hazardous decomposition products:

Conditions to avoid:

Materials to avoid:

Stable under recommended storage conditions.

None under normal processing.

Thermal decomposition can lead to release of irritating

Exposure to air or moisture over prolonged periods.

gases and vapours such as carbon oxides.

Incompatible with strong acids, nitrates, oxidizers.

**Product Information Acute toxicity** 

Components

**RTECS Number:** 

**BUTYRIC ACID ETHYL ESTER** 

ET1660000

Selected LD50s and LC50s

Oral LD50 Rat: 13 gm/kg

Dermal LD50 Rabbit: >2 gm/kg

Chronic toxicity:

Chronic exposure may cause nausea and vomiting, higher exposure causes

unconsciousness.

Local effects:

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and

vomiting.

Specific effects:

May include moderate to severe erythema (redness) and moderate edema (raised

skin), nausea, vomiting, headache.

**Primary irritation:** Carcinogenic effects: Mutagenic effects:

No data is available on the product itself. No data is available on the product itself. No data is available on the product itself.

Reproductive toxicity:

No data is available on the product itself.

#### 12. ECOLOGICAL INFORMATION

Mobility:

Bioaccumulation: **Ecotoxicity effects:** Aquatic toxicity:

No data available No data available

No data available

May cause long-term adverse effects in the aquatic environment.

Product name: BUTYRIC ACID ETHYL ESTER

Page 3 of 6

Catalog Number: 150539

EPAHO011000394

Components

U.S. DOT - Appendix B -

Marine Pollutan

**BUTYRIC ACID ETHYL ESTER** 

Not Listed

U.S. DOT - Appendix B -

**Severe Marine Pollutants** 

List: Not Listed

Components

Germany VCI (WGK)

World Health Organization

(WHO) - Drinking Water

Not Listed

Not Listed

**Ecotoxicity - Fish Species** 

United Kingdom - The Red

Data Not Listed

Components

**Ecotoxicity - Freshwater** 

Algae Data

Not Listed

**Ecotoxicity - Microtox Data Ecotoxicity - Water Flea** 

Data Not Listed

**BUTYRIC ACID ETHYL ESTER** 

BUTYRIC ACID ETHYL ESTER

**EPA - ATSDR Priority List** 

**EPA - HPV Challenge** 

California - Priority Toxic

**BUTYRIC ACID ETHYL ESTER** 

Not Listed

**Program Chemical List** Not Listed

Not Listed

**Pollutants** Not Listed

Components

Components

**BUTYRIC ACID ETHYL ESTER** 

California - Priority Toxic Pollutants Not Listed

**California - Priority Toxic Pollutants** 

Not Listed

#### 13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished

with this material may be hazardous. Do not re-use empty containers

Contaminated packaging:

Methods for cleaning up:

Ground and bond containers when transferring material

#### 14. TRANSPORT INFORMATION

UN/ld No:

1180

DOT:

Proper shipping name: IATA Hazard Label(s):

**Hazard Class** 

Ethyl butyrate Flammable Liquid

3 -

Flammable liquid

Packing group:

111

**Emergency Response Guide Number (ERG):** 

129

Components

U.S. DOT - Appendix A Table 1 - Reportable Quantities

BUTYRIC ACID ETHYL ESTER

Not Listed

TDG (Canada):

WHMIS hazard class:

B2 flammable liquids

Catalog Number: 150539

Product name: BUTYRIC ACID ETHYL ESTER

Page 4 of 6

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IMDG/IMO

Proper shipping name:

Ethyl butyrate

**IMDG - Hazard Classifications** 

**IMDG - Regulated Substances** 

IMDG class or division = 3

UN1180

Components

U.S. DOT - Appendix B - Marine Pollutan U.S. DOT - Appendix B - Severe Marine

**Pollutants** 

**BUTYRIC ACID ETHYL ESTER** 

Not Listed

Not Listed

IMO-labels:

15. REGULATORY INFORMATION

International Inventories

Components

**BUTYRIC ACID ETHYL ESTER** 

Inventory - United States TSCA - Sect. 8(b)

Canada DSL Inventory List -

Australia (AICS):

Inventory - China:

**EU EINECS List -**

Inventory - Japan:

Korean KECL: **Philippines PICCS:**  Present

Present

Present

Present

203-306-4; C6H12O2

2-779

KE-03851 Present

U.S. regulations:

Components

**BUTYRIC ACID ETHYL** 

**ESTER** 

Not Listed

Know List: [present]

sn 0862

California Proposition 65 Massachusetts Right to New Jersey Right to Know List:

Pennsylvania Right to Know List:

[present]

Components

Florida substance List:

Rhode Island Right to

Contaminants

Illinois - Toxic Air Connecticut - Hazardous Air

**BUTYRIC ACID ETHYL** 

**ESTER** 

**ESTER** 

[present]

Know List: Not Listed

Not Listed

**Poliutants** Not Listed

Components

**SARA 313 Emission** reporting/Toxic Release

**CERCLA/SARA - Section NTP:** 302 Extremely Haz

IARC:

of Chemicals

Not Listed

Not Listed

None

None

**SARA 313 Notification:** 

**BUTYRIC ACID ETHYL** 

The above is your notification as to the SARA 313 listing for this product(s) pursuant to Section 313 of Title III of the Superfund Ammendments and Reauthorization Act of 1986 and 40 CFR Part 372.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2499 (in

Washington, DC or Alaska).

Catalog Number: 150539

Product name: BUTYRIC ACID ETHYL ESTER

Page 5 of 6

MP[®]Biomedicals, LLC

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**State Notification:** 

The above information is your notice as to the Right-to-Know listings of the stated product(s). Individual states will list chemicals for a variety of reasons including, but not limited to, the compounds toxicity; carcinogenic, tumorigenic and/or reproductive hazards; and the compounds environmental impact if accidentally released.

#### **16. OTHER INFORMATION**

Prepared by: Health & Safety

Disclaimer: The information and recommendations contained herein are based upon tests believed to be reliable. However, MP Biomedicals does not guarantee the accuracy or completeness NOR SHALL ANY OF THIS INFORMATION CONSTITUTE A WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE. Adjustment to conform to actual conditions of usage maybe required. MP Biomedicals assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

End of Safety Data Sheet

Catalog Number: 150539 Product name: BUTYRIC ACID ETHYL ESTER Page 6 of 6



Catalog Number: 154910 Revision date: 24-Apr-2006

#### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY INFORMATION

Catalog Number: 154910

Product name: BUTYL FORMATE

Supplier:

MP Biomedicals, LLC 29525 Fountain Parkway Solon, OH 44139

tel: 440-337-1200

Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

#### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Components

**CAS Number** 592-84-7

Weight %

**ACGIH Exposure Limits:** None

**OSHA Exposure Limits:** 

None

**BUTYL FORMATE** 

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: May cause irritation to the eyes, skin and respiratory system., Flammable

Category of Danger: Flammable, Irritant

Principle routes of exposure: Skin Inhalation: Irritating to respiratory system

Ingestion: Irritating to mouth, throat and stomach

Skin contact: Irritating to skin.

Eve contact: Contact with eves may cause irritation

ANSI Classification Irritant - eye, skin, respiratory

Statements of hazard May Cause Eye, Skin and Respiratory Tract irritation.

Flammable

Statement of Spill or Leak - ANSI Label Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment.

Statement of First Aid In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

Precautions - ANSI Label Do not breathe vapors or spray mist Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Avoid breathing vapors. Avoid prolonged or repeated contact with the skin, eyes or respiratory tract. Wash thoroughly after exposure.

#### 4. FIRST AID MEASURES

Catalog Number: 154910

Product name: BUTYL FORMATE

Page 1 of 6

MP Biomedicals, LLC www.mpbio.com

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where

Inhalation: Move to fresh air. Call a physician immediately.

Skin contact: Rinse immediately with plenty of water for at least 15 minutes Call a physician immediately

Ingestion: Do not induce vomiting without medical advice.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician

immediately Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician

Protection of first-aiders: No information available

Medical conditions aggravated by exposure: None known

#### 5. FIRE FIGHTING MEASURES

Suitable extinguishing media:

Specific hazards:

Unusual hazards:

Special protective equipment for firefighters:

Specific methods:

Flash point:

Autoignition temperature:

NFPA rating:

NFPA Health:

NFPA Flammability: NFPA Reactivity:

3 0 Use dry chemical, CO2, water spray or 'alcohol' foam.

Burning produces irritant fumes.

None known

Wear self contained breathing apparatus for fire fighting if

necessary. In the event of fire and/or explosion do not

breathe fumes.

Water mist may be used to cool closed containers.

Not determined Not determined

#### 6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

**Environmental precautions:** Methods for cleaning up:

Use personal protective equipment.

Do not flush into surface water or sanitary sewer system. Ground and bond containers when transferring material

Soak up with inert absorbent material.

#### 7. HANDLING AND STORAGE

Storage:

**ROOM TEMPERATURE** 

Handling:

Use only in area provided with appropriate exhaust ventilation.

Safe handling advice:

Wear personal protective equipment. Remove and wash

contaminated clothing before reuse.

Technical measures/storage conditions:

Keep container tightly closed in a dry and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition Keep containers tightly closed in a cool.

well-ventilated place.

Incompatible products:

Oxidising and spontaneously flammable products

#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation, especially in confined areas.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

Hand protection: Pvc or other plastic material gloves

Skin and body protection: Impervious clothing Long sleeved clothing

Catalog Number: 154910

Product name: BUTYL FORMATE

Page 2 of 6

Eve protection: If splashes are likely to occur, wear: Safety glasses with side-shields Goggles Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.



#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor

Physical state:

Formula:

Molecular weight: Melting point/range: Boiling point/range:

Density:

Vapor pressure: **Evaporation rate:** Vapor density: Solubility (in water):

Flash point:

Autoignition temperature:

Colorless

Liquid C5H1OO2

102.1

No data available at this time. No Data available at this time.

0.89 a/ml

No data available No data available No data available No data available Not determined

Not determined

#### 10. STABILITY AND REACTIVITY

Stability:

Polymerization:

Hazardous decomposition products:

Stable under recommended storage conditions.

None under normal processing.

Thermal decomposition can lead to release of irritating

gases and vapours such as carbon oxides.

Materials to avoid:

Reacts with strong acids, nitrates, oxidizers. May accumulate static electrical charges, and may cause ignition of its vapors.

Conditions to avoid:

Exposure to air or moisture over prolonged periods.

#### 11. TOXICOLOGICAL INFORMATION

**Product Information** 

**Acute toxicity BUTYL FORMATE** 

Components

**RTECS Number:** 

LQ5500000

Selected LD50s and LC50s

Not Determined

Chronic toxicity:

Chronic exposure may cause nausea and vomiting, higher exposure causes

unconsciousness.

Local effects:

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and

Specific effects:

May include moderate to severe erythema (redness) and moderate edema (raised

skin), nausea, vomiting, headache.

Primary irritation:

Carcinogenic effects: Mutagenic effects: Reproductive toxicity: A primary irritant.

No data is available on the product itself. No data is available on the product itself. No data is available on the product itself.

#### 12. ECOLOGICAL INFORMATION

Mobility:

Bioaccumulation:

**Ecotoxicity effects:** 

No data available

No data available No data available

Catalog Number: 154910

Product name: BUTYL FORMATE

Page 3 of 6

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Aquatic toxicity:

May cause long-term adverse effects in the aquatic

environment.

Components

U.S. DOT - Appendix B -

Marine Pollutan

Not Listed

U.S. DOT - Appendix B -**Severe Marine Pollutants** 

Not Listed

United Kingdom - The Red

List:

Not Listed

Components

Germany VCI (WGK)

World Health Organization (WHO) - Drinking Water

**Ecotoxicity - Fish Species** 

Data

**BUTYL FORMATE** 

**BUTYL FORMATE** 

Not Listed

Not Listed

Not Listed

Components

**Ecotoxicity - Freshwater** 

Algae Data

**Ecotoxicity - Microtox Data Ecotoxicity - Water Flea** 

Data

**BUTYL FORMATE** 

Not Listed

Not Listed

Not Listed

Components

**EPA - ATSDR Priority List** 

**EPA - HPV Challenge** 

California - Priority Toxic

**BUTYL FORMATE** 

Not Listed

**Program Chemical List** Not Listed

**Pollutants** Not Listed

Components **BUTYL FORMATE**  Not Listed

California - Priority Toxic Pollutants

California - Priority Toxic Pollutants

Not Listed

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished

with this material may be hazardous. Do not re-use empty containers

Contaminated packaging: Methods for cleaning up:

Ground and bond containers when transferring material

Soak up with inert absorbent material.

14. TRANSPORT INFORMATION

UN/Id No:

1128

DOT:

Proper shipping name: IATA Hazard Label(s):

**Hazard Class** 

n-Butyl formate Flammable Liquid

3 -

Flammable liquid

Packing group:

II

**Emergency Response Guide Number (ERG):** 

129

Components

U.S. DOT - Appendix A Table 1 - Reportable Quantities

**BUTYL FORMATE** 

Not Listed

TDG (Canada):

Catalog Number: 154910

Product name: BUTYL FORMATE

Page 4 of 6

WHMIS hazard class:

B2 flammable liquids D2b toxic materials



IMDG/IMO

Proper shipping name:

n-Butyl formate

**IMDG - Hazard Classifications** 

IMDG class or division = 3

**IMDG - Regulated Substances** 

UN1128

Components

U.S. DOT - Appendix B - Marine Pollutan U.S. DOT - Appendix B - Severe Marine

**Pollutants** 

**BUTYL FORMATE** 

Not Listed

Not Listed

IMO-labels:

#### 15. REGULATORY INFORMATION

#### International Inventories

Components

**BUTYL FORMATE** 

Inventory - United States TSCA - Sect. 8(b)

Present Present

Canada DSL Inventory List -

Present

Australia (AICS):

Present

Inventory - China:

209-772-5; C5H10O2

**EU EINECS List -**

2-684

Inventory - Japan: **Philippines PICCS:** 

Present

U.S. regulations:

Components

California Proposition 65 Massachusetts Right to New Jersey Right to

Pennsylvania Right to Know

Not Listed

Know List:

Know List:

List:

**BUTYL FORMATE** 

[present]

sn 0289

[present]

Components

Florida substance List:

Rhode Island Right to

Illinois - Toxic Air Contaminants

Connecticut - Hazardous Air

**BUTYL FORMATE** 

[present]

**Know List:** Not Listed

Not Listed

**Pollutants** Not Listed

SARA 313 Emission

Components

reporting/Toxic Release 302 Extremely Haz

CERCLA/SARA - Section NTP:

IARC:

**BUTYL FORMATE** 

of Chemicals Not Listed

Not Listed

None

None

**SARA 313 Notification:** 

The above is your notification as to the SARA 313 listing for this product(s) pursuant to Section 313 of Title III of the Superfund Ammendments and Reauthorization Act of 1986 and 40 CFR Part 372.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2499 (in

Washington, DC or Alaska).

Catalog Number: 154910

Product name: BUTYL FORMATE

Page 5 of 6

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State Notification:

The above information is your notice as to the Right-to-Know listings of the stated product(s). Individual states will list chemicals for a variety of reasons including, but not limited to, the compounds toxicity; carcinogenic, tumorigenic and/or reproductive hazards; and the compounds environmental impact if accidentally released.

#### 16. OTHER INFORMATION

Prepared by: Health & Safety

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End of Safety Data Sheet

Catalog Number: 154910 Product name: BUTYL FORMATE Page 6 of 6

Printing date 08/28/2006

Reviewed on 08/25/2006

#### 1 Identification of substance:

Product details:

Product name: Butyric acid

Stock number:

36544 L13189

#### Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company Johnson Matthey Catalog Company, Inc. 30 Bond Street

Ward Hill, MA 01835-8099

Emergency Phone: (978) 521-6300

CHEMTREC: (800) 424-9300

Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency information:

During normal hours the Health, Safety and Environmental Department.

After normal hours call Chemtrec at (800) 424-9300.

#### 2 Composition/Data on components:

Chemical characterization:

Description: (CAS#)

Butyric acid (CAS# 107-92-6); 100%

Identification number(s): EINECS Number: 203-532-3 EU Number: 607-135-00-X

#### 3 Hazards identification

#### Hazard description:



C Corrosive

Information pertaining to particular dangers for man and environment

R 34 Causes burns.

Classification system

HMTS ratings (scale 0-4)

(Hazardous Materials Identification System)



Health (acute effects) = 2
Flammability = 1
Reactivity = 1

#### 4 First aid measures

#### General information

Immediately remove any clothing soiled by the product.

#### After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

#### After skin contact

Immediately wash with water and soap and rinse thoroughly.

(Contd. on page 2)

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Butyric acid

(Contd. of page 1)

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.

#### 5 Fire fighting measures

#### Suitable extinguishing agents

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide (CO)

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

#### 6 Accidental release measures

#### Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

#### Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

#### Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

#### Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

#### 7 Handling and storage

#### Handling

#### Information for safe handling:

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

No special measures required.

#### Storage

#### Requirements to be met by storerooms and receptacles:

No special requirements.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

(Contd. on page 3)

USA -

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Butyric acid

(Contd. of page 2)

Store in cool, dry conditions in well sealed containers.

#### 8 Exposure controls and personal protection

#### Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Not required.

Additional information: No data

#### Personal protective equipment

#### General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

#### Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands: Impervious gloves

#### Eye protection:

Safety glasses

Tightly sealed goggles

Full face protection

Body protection: Protective work clothing.

#### 9 Physical and chemical properties:

Form:	Liquid
Color:	Colorless
Odor:	Unpleasant
Change in condition	
Melting point/Melting range:	-5°C (23°F)
Boiling point/Boiling range:	164°C (327°F)
Sublimation temperature / start	: Not determined
Flash point:	71°C (160°F)
Ignition temperature:	440°C (824°F)
Decomposition temperature:	Not determined
Danger of explosion:	Product does not present an
	explosion hazard.
Explosion limits:	
Lower:	2 Vol %
Upper:	10 Vol %
Vapor pressure at 20°C (68°F):	1.12 hPa (1 mm Hg)
Density at 20°C (68°F):	0.96 g/cm ³

-- USA

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Butyric acid

(Contd. of page 3)

Solubility in / Miscibility with Water at 20°C (68°F):

>38 g/l

#### 10 Stability and reactivity

#### Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

#### Materials to be avoided:

Oxidizing agents

Bases

Dangerous reactions No dangerous reactions known

Dangerous products of decomposition: Carbon monoxide and carbon dioxide

#### 11 Toxicological information

#### Acute toxicity:

LD/LC50 values that	LD/LC50 values that are relevant for classification:				
Oral	LD50	2000 mg/kg (rat)			
	LDLo	500 mg/kg (mus)			
Dermal	LD50	530 μg/kg (rbt)			
Irritation of skin	moderate	20 mg/24H (rbt)			
	**************************************	500 mg (rbt)			

#### Primary irritant effect:

#### on the skin:

Corrosive effect on skin and mucous membranes.

Irritant to skin and mucous membranes.

#### on the eye:

Strong corrosive effect.

Irritating effect.

Sensitization: No sensitizing effects known.

#### Subacute to chronic toxicity:

Animal studies have shown damage to the gastrointestinal system, kidney, bladder, blood and respiratory tract from butyric acid exposure. Convulsions have also been reported.

#### Subacute to chronic toxicity:

Corrosive materials are acutely destructive to the respiratory tract, eyes, skin and digestive tract. Eye contact may result in permanent damage and complete vision loss. Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis. May cause coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Ingestion may cause damage to the mouth, throat and esophagus. May cause skin burns or irritation depending on the severity of the exposure.

#### Additional toxicological information:

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

(Contd. on page 5)

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Butyric acid

(Contd. of page 4)

#### 12 Ecological information:

#### General notes:

Do not allow material to be released to the environment without proper governmental permits.

#### 13 Disposal considerations

Product:

Recommendation

Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

#### 14 Transport information

#### DOT regulations:



Hazard class:

Identification number:

UN2820

Packing group:

TTT

Hazardous substance:

5000 lbs, 2270 kg

Proper shipping name (technical

name): Label

BUTYRIC ACID

#### Land transport ADR/RID (cross-border)



ADR/RID class:

8 (C3) Corrosive substances

Danger code (Kemler):

80

UN-Number:

2820

TTT

Packaging group: Description of goods:

2820 BUTYRIC ACID

#### Maritime transport IMDG:



IMDG Class:

8

UN Number:

2820

Label

8

Packaging group:

III

EMS Number:

F-A, S-B

(Contd. on page 6)

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Butyric acid

(Contd. of page 5)

Proper shipping name:

BUTYRIC ACID

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 8
UN/ID Number: 2820
Label 8

Packaging group: III

Proper shipping name: BUTYRIC ACID

#### 15 Regulations

#### Product related hazard informations:

#### Hazard symbols:

C Corrosive

#### Risk phrases:

34 Causes burns.

#### Safety phrases:

- 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- 36 Wear suitable protective clothing.
- 45 In case of accident or if you feel unwell, seek medical advice immediately.

#### National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

#### Information about limitation of use:

For use only by technically qualified individuals.

#### 16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department. Contact: Darrell R. Sanders

IISA

Date Printed: 07/12/2006 Date Updated: 02/06/2006

Version 1.4

#### Section 1 - Product and Company Information

Product Name

BUTYL ETHER

Product Number

34460

Brand

FLUKA

Company

Sigma-Aldrich

Address

3050 Spruce Street

SAINT LOUIS MO 63103 US

Technical Phone:

800-325-5832

Fax:

800-325-5052

Emergency Phone:

314-776-6555

#### Section 2 - Composition/Information on Ingredient

Substance Name BUTYL ETHER

CAS # 142-96-1

SARA 313

No

Formula

C8H180

Synonyms

1-Butoxybutane * Butyl ether * n-Butyl ether * Dibutyl ether * Di-n-butyl ether * n-Dibutyl ether * Dibutyl oxide * Ether butylique (French)

* 1,1'-Oxybis(butane)

RTECS Number:

EK5425000

#### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Flammable. Irritant.

Irritating to eyes, respiratory system and skin. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

#### HMIS RATING

HEALTH: 2

FLAMMABILITY: 3 REACTIVITY: 1

#### NFPA RATING

HEALTH: 2

FLAMMABILITY: 3
REACTIVITY: 1

For additional information on toxicity, please refer to Section 11.

#### Section 4 - First Aid Measures

#### ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

#### INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give

artificial respiration. If breathing is difficult, give oxygen.

#### DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious amounts of water.

#### EYE EXPOSURE

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

#### Section 5 - Fire Fighting Measures

#### FLAMMABLE HAZARDS

Flammable Hazards: Yes Peroxide Former: Yes

#### EXPLOSION HAZARDS

Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

#### FLASH POINT

77 'F 25 'C Method: closed cup

#### EXPLOSION LIMITS

Lower: 0.9 % Upper: 8.5 %

#### AUTOIGNITION TEMP

185 °C

#### FLAMMABILITY

N/A

#### EXTINGUISHING MEDIA

Suitable: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

#### FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Flammable liquid. Emits toxic fumes under fire conditions.

#### Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL Evacuate area. Shut off all sources of ignition.

#### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

#### METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

#### Section 7 - Handling and Storage

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#### HANDLING

User Exposure: Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Suitable: Keep container closed. Keep away from heat, sparks, and open flame.

#### SPECIAL REQUIREMENTS

Store under inert gas. Air and light sensitive.

#### Section 8 - Exposure Controls / PPE

#### ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

#### PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Hand: Compatible chemical-resistant gloves.

#### Eye: Chemical safety goggles.

#### GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

Appearance	Physical State: Lic	quid
Property	Value	At Temperature or Pressure
Molecular Weight pH BP/BP Range MP/MP Range Freezing Point Vapor Pressure Vapor Density Saturated Vapor Conc. SG/Density Bulk Density Odor Threshold	130.23 AMU 5.2 140.0 - 142.0 °C - 98.0 °C N/A 4.8 mmHg 4.48 g/l N/A 0.764 g/cm3 N/A N/A	20 °C
Volatile% VOC Content Water Content Solvent Content Evaporation Rate Viscosity Surface Tension Partition Coefficient Decomposition Temp. Flash Point Explosion Limits	N/A N/A N/A N/A N/A N/A N/A N/A N/A N/A	Method: closed cup

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Flammability N/A
Autoignition Temp 185 °C
Refractive Index 1.3988
Optical Rotation N/A
Miscellaneous Data N/A

Solubility in Water: 10 mg/ml H2O, 20°C

#### N/A = not available

#### Section 10 - Stability and Reactivity

#### STABILITY

Stable: Stable.

Conditions to Avoid: Light. Air. Forms explosive peroxides on

prolonged storage

Materials to Avoid: Oxidizing agents, Strong acids.

#### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

#### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

#### Section 11 - Toxicological Information

#### ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes eye irritation.

Inhalation: Material is irritating to mucous membranes and upper

respiratory tract. May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

#### SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### TOXICITY DATA

Oral

Rat

7400 mg/kg

LD50

Inhalation

Mouse

169,000 mg/m3

LC50

Remarks: Behavioral:General anesthetic.

Skin

Rabbit

10 ML/KG

LD50

#### IRRITATION DATA

Eyes Human 200 ppm 15M Skin Rabbit 380 mg

Remarks: Open irritation test

#### Section 12 - Ecological Information

#### ACCUMULATION

Bioaccumulation Potential: Indication of bioaccumulation.

ACUTE ECOTOXICITY TESTS Test Type: LC50 Fish

Time: 96 h

Value: < 100 mg/l

ADDITIONAL RESULTS/DATA FROM RELEVENT SCIENTIFIC EXPERIMENTS Avoid contamination of the environment

#### Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
Contact a licensed professional waste disposal service to dispose
of this material. Burn in a chemical incinerator equipped with an
afterburner and scrubber but exert extra care in igniting as this
material is highly flammable. Observe all federal, state, and
local environmental regulations.

#### Section 14 - Transport Information

#### DOT

Proper Shipping Name: Dibutyl ethers

UN#: 1149 Class: 3

Packing Group: Packing Group III Hazard Label: Flammable liquid

PIH: Not PIH

#### IATA

Proper Shipping Name: Dibutyl ethers

IATA UN Number: 1149 Hazard Class: 3 Packing Group: III

#### Section 15 - Regulatory Information

#### EU DIRECTIVES CLASSIFICATION

Symbol of Danger: Xi

Indication of Danger: Irritant.

R: 10-36/37/38-52/53

Risk Statements: Flammable. Irritating to eyes, respiratory system and skin. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. S: 61

Safety Statements: Avoid release to the environment. Refer to

#### US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Flammable. Irritant.

special instructions/safety data sheets.

Risk Statements: Irritating to eyes, respiratory system and skin. Harmful to aquatic organisms, may cause long-term adverse

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effects in the aquatic environment. Safety Statements: Avoid release to the environment. Refer to special instructions/safety data sheets.

UNITED STATES REGULATORY INFORMATION SARA LISTED: NO TSCA INVENTORY ITEM: Yes

#### CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes NDSL: No

Section 16 - Other Information

#### DISCLAIMER

For R&D use only. Not for drug, household or other uses.

#### WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2006 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

# EPAHO011000416



# **ALDON**

221 Rochester Street

MATERIAL SAFETY DATA SHEET

Avon, New York 14414-9409 (585) 226-6177

#### ® CORPORATION MSDS No.: BB0254 Effective Date: May 18, 2005 SECTION I NAME 24 HOUR EMERGENCY ASSISTANCE **Product** Butylene Glycol CHEMTREC Health 800-424-9300 Chemical 1.3-Butanediol Synonyms Day 585-226-6177 Fire Formula HOCH, CH, CHOHCH, Reactivity 0 NFPA HMIS **Unit Size** up to 180 Kg. HAZARD RATING MINIMAL SLIGHT MODERATE SERIOUS SEVERE C.A.S. No. 107-88-0 3 **INGREDIENTS OF MIXTURES** SECTION II **TLV Units** Principal Component(s) 100% None established. 1,3-Butylene glycol See Section V. CAUTION! KEEP AWAY FROM HEAT, SPARKS AND FLAME. ALWAYS OPEN CONTAINER SLOWLY TO ALLOW EXCESS PRESSURE TO VENT. SECTION III **PHYSICAL DATA** Melting Point (°F) Specific Gravity (H₂O = 1) Freezing point -50°C (-58°F) 1.005 @ 20/20°C Percent Volatile Boiling Point (°F) 207.5°C (406°F) 100% by Volume (%) vaporation Rate Vapor Pressure (mm Hg) 0.06 @ 20°C Nil ( Butyl acetate =1) Vapor Density (Air=1) 3.1 @ 20°C Solubility in Water Complete. Appearance & Odor Clear, colorless, mobile syrupy liquid; essentially odorless. SECTION IV FIRE AND EXPLOSION HAZARD DATA Flash Point Flammable Limits in Air Upper (Method Used) 121°C (250°F) TOC ASTM D1310 % by Volume Extinguisher Use carbon dioxide or dry chemical for small fires. Alcohol-type aqueous film-forming foam Media or water spray for large fires. SPECIAL FIREFIGHTING **PROCEDURES** If potential for exposure to vapors or products of combustion exists, wear complete personal protective equipment, including self-contained breathing apparatus with full facepiece operated in pressure-demand or other positive-pressure mode. Water spray can be used to reduce intensity of flames and to dilute spills to non-flammable mixture. Use water spray to cool fire exposed structures and vessels **UNUSUAL FIRE AND EXPLOSION HAZARDS**

Foam or water can cause frothing.

D.O.T. NON-REGULATED. spartment of Labor "essentially similar" to form OSHA-20 Approved by

SECTION V	HEALTH HAZARD DATA	BB0254
Threshold Limited Value	None established by ACGIH. RTECS No. EK0440000 LD50: 23 gm/kg; scu-rat LD50: 20 gm/kg; orl-mus LD5 gpg LD50: 11 gm/kg.	
Effects of Overexposure	Practically non-toxic to animals (oral LD50 rats: 23gm/ irritating to skin and eyes. Significant exposure to this adversely affect people with chronic disease of the Cer blood, skin and/or cardiovascular system. Target organ	chemical may ntral Nervous System,
Emergency and First Aid Procedures	INGESTION: Call physician or Poison Control Center	immediately. Induce

vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person. EYES: Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention SKIN: Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention. INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

SECTIO	N VI	R	EACTIVITY DATA		
Stability Unstable Stable		Conditions to Avoid			
		×		Heat, sparks or flame.	
Incompati (Materials				ner dehydrating agents; Nitric acid, oxygen nd other strong oxidizing agents.	
Hazardous Decompos	-	ducts	Carbon monoxide, butac	diene.	
Hazardous	Polymeriza	tion	Conditions to Avoid		
Мау Осси	Will N	ot Occur		Flame.	
		Y	· · <del>··-</del> ·		

<b>SECTION VII</b>	SPIL	L OR LEAK	<b>PROCEDURES</b>

Steps to be taken in case material is released or spilled

Eliminate ignition sources. Absorb spill in absorbent material, shovel into suitable container for proper disposal. Avoid runoff into storm sewers and ditches which lead to natural waterways.

Waste Disposal Method

First Aid Procedures

Discharge, treatment, or disposal may be subject to Federal, State or Local laws. These disposal guidelines are intended for the disposal of catalog-size quantities only.

Dispose of in accordance with federal, state and local regulations.

SECTION \	/III	SPE	ECIAL PROTECTION INFORMATION			
Respiration Protec (Specify Type)	tion	Use a NIOSH	SH/MSHA approved respirator with organic vapor cartridge.			
Ventilation	Local	Exhaust	Recommended	. Specia	Special No.	
	Mech	nical (General)	Recommended	. Other	:	No.
Protective Gloves		Neopre	Neoprene or rubber.		tection	Chemical safety goggles.

Other Protective Equipment

Lab coat, apron, eye wash station, proper gloves, safety shower.

#### SECTION IX Precautions to be Taken in Handling & Storing Keep container tightly closed when not in use.

SPECIAL PRECAUTIONS

Always open containers slowly to allow any excess pressure to vent. Store in 15-27°C (60-80°F) range to minimize taste and odor buildup. Keep away from heat, sparks and flame. Wash thoroughly after handling.

Other Precautions

Read label on container before using. Do not wear contact lenses when working with chemicals. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.

Avoid contact with skin, eyes and clothing. Avoid breathing vapor or mist. Use with adequate ventilation. Remove and wash contaminated clothing.

Chemical Safety Revision No. 2 Date 05/18/05 Approved Michael Raszeia MR

The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these r and the safety at health of employees. *Hearefulosis Materials Industrial Shandards. Printed on recycled paper.



# THE DOW CHEMICAL COMPANY MATERIAL SAFETY DATA SHEET



Product Name: BUTYL CELLOSOLVE(TM) ACETATE

MSDS#: 834

Effective Date: 07/15/2003

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Dow (hereinafter, and for purposes of this MSDS only, refers to The Dow Chemical Company and to Dow Chemical Canada Inc.) encourages and expects you to read and understand the entire MSDS, as there is important information throughout the document. Dow expects you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

#### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

#### 1.1 IDENTIFICATION

**Product Name** 

BUTYL CELLOSOLVE(TM) ACETATE

#### 1.2 COMPANY IDENTIFICATION

The Dow Chemical Company Midland, MI 48674

#### 1.3 EMERGENCY TELEPHONE NUMBER

24-HOUR EMERGENCY TELEPHONE NUMBER: (989)636-4400. Customer Information Number: 1-800-258-2436.

^{*} or ® Indicates a Trademark of The Dow Chemical Company.

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#### 2. COMPOSITION INFORMATION

Component CAS # Amount (%W/W)

Ethylene glycol butyl ether acetate 112-07-2 >= 99 <= 100%

#### 3. HAZARDS IDENTIFICATION

#### 3.1 EMERGENCY OVERVIEW

**Appearance** 

Colorless

**Physical** 

Liquid

State

Odor

Ethereal, Fruity

Hazards of

COMBUSTIBLE LIQUID AND VAPOR. MAY CAUSE EYE IRRITATION.

product MAY CAUSE EYE IRRITATION

MAY BE HARMFUL IF ABSORBED THROUGH SKIN.

ISOLATE AREA.

#### 3.2 POTENTIAL HEALTH EFFECTS

#### Effects of Single Acute Overexposure

**Inhalation** Excessive exposure may cause irritation to upper respiratory tract (nose and throat). Prolonged excessive exposure to mist may cause serious adverse effects, even death.

**Eye Contact** May cause slight eye irritation. Effects may include discomfort and redness. Vapor or mist may cause eye irritation.

Skin Contact Prolonged contact is essentially nonirritating to skin.

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**Skin Absorption** Prolonged or widespread skin contact may result in absorption of potentially harmful amounts.

**Swallowing** Low toxicity if swallowed. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

#### Chronic, Prolonged or Repeated Overexposure

Other Effects of Overexposure No information available.

See Section 11 for toxicological information and additional information about potential health effects.

#### 3.3 POTENTIAL ENVIRONMENTAL EFFECTS

See Section 12 for Ecological Information.

#### 4. FIRST AID PROCEDURES

#### 4.1 INHALATION

Move person to fresh air; if effects occur, consult a physician.

#### **4.2 EYE CONTACT**

Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

#### 4.3 SKIN CONTACT

Immediately flush skin with water while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Discard contaminated articles including leather items such as shoes.

#### 4.4 SWALLOWING

If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

#### 4.5 NOTES TO PHYSICIAN

Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress.

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No specific antidote.

Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

#### 5. FIRE FIGHTING MEASURES

# 5.1 FLAMMABLE PROPERTIES - REFER TO SECTION 9, PHYSICAL AND CHEMICAL PROPERTIES

#### 5.2 EXTINGUISHING MEDIA

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

#### **5.3 FIRE FIGHTING PROCEDURES**

Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

#### 5.4 SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

#### 5.5 UNUSUAL FIRE AND EXPLOSION HAZARDS

Container may rupture from gas generation in a fire situation.

Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

#### 5.6 HAZARDOUS COMBUSTION PRODUCTS

During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

#### 6. ACCIDENTAL RELEASE MEASURES

Steps to be Taken if Material is Released or Spilled:

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Contain spilled material if possible. Collect in suitable and properly labeled containers. Dilute with large quantities of water. See Section 13, Disposal Considerations, for additional information.

Personal Precautions: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to Section 7, Handling for additional precautionary measures.

**Environmental Precautions:** Prevent from entering into soil, ditches, sewers, waterways and/ or groundwater. See Section 12, Ecological Information.

#### 7. HANDLING AND STORAGE

#### 7.1 HANDLING

#### **General Handling**

Keep away from heat, sparks and flame.

Avoid prolonged contact with eyes, skin and clothing.

Wash thoroughly after handling.

Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.

#### Ventilation

Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Use only with adequate ventilation.

#### Other Precautions

Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

#### 7.2 STORAGE

Store in the following material(s): carbon steel. stainless steel. high-baked, phenolic-lined tanks. Do not store in: Aluminum. Copper. galvanized iron. galvanized steel. Viton. neoprene. nitrile. natural rubber.

#### 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

#### 8.1 EXPOSURE LIMITS

Component Exposure Limits Skin Form

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Ethylene glycol butyl ether

20 ppm TWA8 ACGIH

acetate

In the Exposure Limits Chart above, if there is no specific qualifier (i.e., Aerosol) listed in the Form Column for a particular limit, the listed limit includes all airborne forms of the substance that can be inhaled.

A "Yes" in the Skin Column indicates a potential significant contribution to overall exposure by the cutaneous (skin) route, including mucous membranes and the eyes, either by contact with vapors or by direct skin contact with the substance. A "Blank" in the Skin Column indicates that exposure by the cutaneous (skin) route is not a potential significant contributor to overall exposure.

#### **8.2 PERSONAL PROTECTION**

Respiratory Protection:

Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use an approved air-purifying or positive-pressure supplied-air respirator depending on the potential airborne concentration.

For emergency and other conditions where the exposure guideline may be exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-

contained air supply.

In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure airline with auxiliary self-

contained air supply.

Ventilation:

Provide general and/or local exhaust ventilation to control airborne

levels below the exposure guidelines. Use only with adequate ventilation.

Eye Protection:

Use safety glasses.

If exposure causes eye discomfort, use a full-face respirator.

**Other Protective** Equipment:

Use protective clothing chemically resistant to this material. Selection of specific items such as faceshield, gloves, boots, apron, or full body

suit will depend on operation.

Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

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#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Appearance: Colorless

Odor: Ethereal, Fruity

Flash Point - Closed Cup: 74 °C 165 °F , Tag Closed Cup ASTM D 56

Flammable Limits In Air:

Lower

0.5 %(V)

Upper

8.54 %(V) 135 °C, 275 °F

Autoignition Temperature: No test data available.

Vapor Pressure:

0.2 mmHg 20 °C

Boiling Point (760 mmHg): 192 °C 377 °F

Vapor Density (air = 1):

Specific Gravity (H2O = 1): 0.972

20°C/20°C

Freezing Point:

-64 °C

-83 °F

Melting Point: Not applicable.

Solubility in Water (by weight):

2% 20°C

pH:

No test data available.

Molecular Weight: 160 g/mol

Octanol/Water Partition Coefficient - Measured: , 1.51 - 1.79

Octanol/Water Partition Coefficient - Calculated by Structural Fragment Method:

1.57

Evaporation Rate (Butyl Acetate = 1):

0.04

Percent Volatiles: 100 Wt%

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### 10. STABILITY AND REACTIVITY

10.1 STABILITY/INSTABILITY Thermally stable at typical use temperatures.

Conditions to Avoid: Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible Materials: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

Thermal Decomposition: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Ketones. Organic acids.

10.2 HAZARDOUS POLYMERIZATION Will not occur.

#### 11. TOXICOLOGICAL INFORMATION

#### **ACUTE TOXICITY**

Peroral

Rat; LD50 = 7250 mg/kg

**Percutaneous** 

Rabbit; LD50 = 1540 mg/kg

CHRONIC TOXICITY AND CARCINOGENICITY

CARCINOGENICITY CLASSIFICATIONS

Component

Agency

Classification

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Ethylene glycol butyl ether acetate

**ACGIH** 

A3: Confirmed Animal Carcinogen with Unknown Relevance to

Humans

#### 12. ECOLOGICAL INFORMATION

#### 12.1 ENVIRONMENTAL FATE

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. The rate constant for the vapor phase reaction with photochemically produced hydroxyl radicals at 25C is estimated to be: 2.12E-11 cm3/molecule-sec. at 25°C Material is ultimately biodegradable. Reaches > 70% mineralization in OECD test(s) for inherent biodegradability. Biodegradation reached in Modified Zahn-Wellens/EMPA Test (OECD Test No. 302 B) after 28 days: 77 - 90%. Mean degradation reached in Continuous Activated Sludge assay (OECD Test No. 303 A): 96.7% in 3 hr. Biodegradation reached in Modified MITI Test (I) (OECD Test No. 301 C) after 28 days: 88%.

**BOD (% Oxygen consumption)** 

Day 5	Day 10	Day 15	Day 20	Day 28/30
53 %	69 - 80 %		72 - 80 %	

#### 12.2 ECOTOXICITY

Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested)., Inhibitory concentration (IC50) in OECD Activated Sludge Respiration Inhibition Test (OECD Test No. 209) is:, 900 mg/L in 30 min., The 16-h growth inhibition EC50 in bacteria is:, 2800 mg/L.

#### **Toxicity to Aquatic Invertebrates**

water flea (Daphnia magna); Acute LC50

Result value: 140 mg/L

#### **Toxicity to Aquatic Invertebrates**

water flea (Daphnia magna); Acute immobilization EC50

Result value: (37 - 180) mg/L

#### **Toxicity to Aquatic Plants**

alga (Scenedesmus sp.); Growth inhibition; EC50

Result value: > 500 mg/L

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**Toxicity to Fish** 

fathead minnow (Pimephales promelas); Acute LC50

Result value: 22 - 31 mg/L

**Toxicity to Fish** 

golden orfe (Leuciscus idus); Acute LC50

Result value: 80 mg/L

#### 12.3 FURTHER INFORMATION

Bioconcentration potential is low (BCF < 100 or Log Pow < 3). Potential for mobility in soil is very high (Koc between 0 and 50). Soil organic carbon/water partition coefficient (Koc) is estimated to be: 26-224 Henry's Law Constant (H) is estimated to be: 5.27 E-06 atm-m3/mole at 25°C.

Theoretical Oxygen Demand (THOD) - calculated:: 2.10 mg/mg

Octanol/Water Partition Coefficient - Measured: , 1.51 - 1.79

Octanol/Water Partition Coefficient - Calculated by Structural Fragment Method: 1.57

#### 13. DISPOSAL CONSIDERATIONS

#### 13.1 DISPOSAL

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. DOW HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2 (Composition/ Information on Ingredients). FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Group at 1-800-258-2436 or 1-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details.

#### 14. TRANSPORT INFORMATION

Product Name: BUTYL CELLOSOLVE(TM) ACETATE

Effective Date: 07/15/2003

MSDS#: 834

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14.1 U.S. D.O.T.

**NON-BULK** 

**Proper Shipping Name: NOT REGULATED** 

BULK

Proper Shipping Name: COMBUSTIBLE LIQUID, NOS

Technical Name: ETHYLENE GLYCOL MONOBUTYL ETHER ACETATE

Hazard Class: COMBUSTIBLE LIQUID

ID Number: NA1993 Packing Group: PG III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

#### 15. REGULATORY INFORMATION

#### 15.1 FEDERAL/NATIONAL

#### **OSHA HAZARD COMMUNICATION:**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 TITLE III (EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT) SECTION 313

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act 1986 and 40 CFR Part 372.

**Component**Glycol Ethers

CAS# Not available

Amount <= 100.0000%

Product Name: BUTYL CELLOSOLVE(TM) ACETATE

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# COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980 (CERCLA) SECTION 103

This product contains the following substances subject to CERCLA Section 103 reporting requirements and are listed in 40 CFR Part 302.4.

Component

CAS#

**Amount** 

Ethylene glycol monoethyl ether

110-80-5

<= 0.0100%

Acetic acid

64-19-7

<= 0.0006%

In addition, this product contains other Glycol Ether(s) which, although included as a broad category on the CERCLA hazardous substance list, has not been assigned a reportable quantity.

# Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right to Know Act) Section 302

To the best of our knowledge this product does not contain chemicals at levels which require reporting under this statute.

# Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right to Know Act) Sections 311 and 312

Delayed (Chronic) Health Hazard: No

Fire Hazard: Yes

Immediate (Acute) Health Hazard : Yes

Reactive Hazard: No

Sudden Release of Pressure Hazard: No

#### TOXIC SUBSTANCES CONTROL ACT (TSCA)

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

#### **EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES (EINECS)**

The components of this product are on the EINECS inventory or are exempt from EINECS inventory requirements.

#### CEPA - DOMESTIC SUBSTANCES LIST (DSL)

**Effective Date: 07/15/2003** Product Name: BUTYL CELLOSOLVE(TM) ACETATE Page 13 of 15 MSDS#: 834 All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed. 15.2 STATE/LOCAL PENNSYLVANIA (WORKER AND COMMUNITY RIGHT TO KNOW ACT): PENNSYLVANIA HAZARDOUS SUBSTANCES LIST AND/OR PENNSYLVANIA ENVIRONMENTAL HAZARDOUS SUBSTANCE LIST: The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting. Component CAS# Amount Glycol Ethers Not available <= 100.0000% PENNSYLVANIA (WORKER AND COMMUNITY RIGHT TO KNOW ACT): PENNSYLVANIA SPECIAL HAZARDOUS SUBSTANCES LIST: To the best of our knowledge this product does not contain chemicals at levels which require reporting under this statute. CALIFORNIA PROPOSITION 65 (SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986) WARNING: This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm. Component CAS# **Amount** Ethylene alycol monoethyl ether 110-80-5 <= 0.0100% Ethylene glycol monoethyl ether acetate 111-15-9 <= 0.0060%

CALIFORNIA SCAQMD RULE 443.1 (SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 443.1, LABELING OF MATERIALS CONTAINING ORGANIC SOLVENTS)

VOC: Vapor pressure 0.2 mmHg @ 20° C

953 g/l

953 g/l less water and less exempted solvents

Product Name: BUTYL CELLOSOLVE(TM) ACETATE

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This section provides selected regulatory information on this product including its components. This is not intended to include all regulations. It is the responsibility of the user to know and comply with all applicable rules, regulations and laws relating to the product being used.

# 16. OTHER INFORMATION

# **16.1 ADDITIONAL INFORMATION**

Additional information on this and other Dow products may be obtained by visiting our web page at www.dow.com.

Additional information on this product may be obtained by calling Dow's Customer Information Group at 1-800-258-2436 (U.S.) or 1-800-331-6451 (Canada).

# 16.2 HAZARD RATING SYSTEM

NFPA ratings for this product are: H-2 F-2 R-0

These ratings are part of a specific hazard communication program and should be disregarded where individuals are not trained in the use of this hazard rating system. You should be familiar with the hazard communication programs applicable to your workplace.

# 16.3 RECOMMENDED USES AND RESTRICTIONS

An oxygenated solvent-

For industrial consumption as a process raw material.

For industrial consumption as a component of a reaction system.

For industrial formulation for inclusion in a final product.

For industrial use as a process aid.

For industrial formulation as a process control material.

For industrial conversion as a raw material for manufacture of articles or goods.

For industrial use.

Dow recommends that you use this product in a manner consistent with the listed use. If your intended use is not consistent with Dow's stated use, please contact Dow's Customer Information Group at 1-800-258-2436 (U.S.) or 1-800-331-6451 (Canada) for more information.

Product Name: BUTYL CELLOSOLVE(TM) ACETATE

MSDS#: 834

Effective Date: 07/15/2003

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# 16.4 REVISION

Version: 6.

Revision: 07/15/2003

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this

document.

## 16.5 LEGEND

Bacterial/NA Non Acclimated Bacteria

Fire Health Н

IHG Industrial Hygiene Guideline

N/A Not available

National Fire Protection Association NFPA

Oxidizer 0 R Reactivity TS Trade secret VOLVOL Volume/Volume W Water Reactive W/W Weight/Weight

NOTICE: Dow urges each customer or recipient of this MSDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this MSDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given., Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that its activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of Dow, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product., Due to the proliferation of sources for information such as manufacturer-specific MSDSs, Dow is not and cannot be responsible for MSDSs obtained from any source other than Dow. If you have obtained a Dow MSDS from a non-Dow source or if you are not sure that a Dow MSDS is current, please contact Dow for the most current version.

,R6**K**25

Section 1 -- PRODUCT AND COMPANY IDENTIFICATION PRODUCT NUMBER HMIS CODES Health Flammability R6K25 Reactivity -PRODUCT NAME
Butyl Cellosolve
MANUFACTURER'S NAME EMERGENCY TELEPHONE NO. (216) 566-2917 THE SHERWIN-WILLIAMS COMPANY 101 Prospect Avenue N.W. Cleveland, OH 44115 DATE OF PREPARATION INFORMATION TELEPHONE NO. 02-JUL-06 (216) 566-2902 Section 2 -- COMPOSITION/INFORMATION ON INGREDIENTS % by WT CAS No. INGREDIENT UNITS VAPOR PRESSURE 100 111-76-2 2-Butoxyethanol ACGIH TLV 20 ppm OSHA PEL 25 ppm 0.88 mm _____ Section 3 -- HAZARDS IDENTIFICATION ROUTES OF EXPOSURE INHALATION of vapor or spray mist.
EYE or SKIN contact with the product, vapor or spray mist.
Contains alcohols and acetates which can be absorbed through the skin. EFFECTS OF OVEREXPOSURE EYES: Irritation. SKIN: Prolonged or repeated exposure may cause irritation. INHALATION: Irritation of the upper respiratory system. May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death. SIGNS AND SYMPTOMS OF OVEREXPOSURE Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists. Redness and itching or burning sensation may indicate eye or excessive skin exposure. MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE None generally recognized. CANCER INFORMATION

For complete discussion of toxicology data refer to Section 11.

# Section 4 -- FIRST AID MEASURES

Flush eyes with large amounts of water for 15 minutes. EYES:

Get medical attention.

Wash affected area thoroughly with soap and water. SKIN:

Remove contaminated clothing and launder before re-use. If affected, remove from exposure. Restore breathing. Keep warm and quiet.

INHALATION:

Do not induce vomiting. INGESTION:

Get medical attention immediately.

# Section 5 -- FIRE FIGHTING MEASURES

FLASH POINT

UEL 10.6

143 F PMCC

1.1

FLAMMABILITY CLASSIFICATION

Combustible, Flash above 99 and below 200 F

EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Foam UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.
During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus

should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat. 

# Section 6 -- ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Remove all sources of ignition. Ventilate the area.

Remove with inert absorbent.

# Section 7 -- HANDLING AND STORAGE

# STORAGE CATEGORY

DOL Storage Class IIIA

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are COMBUSTIBLE. Keep away from heat and open flame.
Consult NFPA Code. Use approved Bonding and Grounding procedures.
Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally.
Keep out of the reach of children.

# Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist. Wash hands after using.

VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108. RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2. PROTECTIVE GLOVES

Wear gloves which are recommended by glove supplier for protection against materials in Section 2. EÝE PROTECTION

Wear safety spectacles with unperforated sideshields. OTHER PROTECTIVE EQUIPMENT

Use of barrier cream on exposed skin is recommended.

OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. 

# Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT 7.49 lb/gal 897 q/l 0.90 SPECIFIC GRAVITY 325 - 343 F BOILING POINT 162 - 172 C Not Available MELTING POINT VOLATILE VOLUME 100 % EVAPORATION RATE Slower than ether VAPOR DENSITY VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)
7.49 lb/gal 897 g/l Less Water and Foots Heavier than air

897 g/l 897 g/l Less Water and Federally Exempt Solvents

7.49 lb/gal Emitted VOC

# Section 10 -- STABILITY AND REACTIVITY

STABILITY -- Stable CONDITIONS TO AVOID None known. INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

Section 16 -- OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.



# **Material Safety Data Sheet**



MSDS DATE:

February 22, 2000

PRODUCT NAME: BRINE SOLUTION

24-Hour Emergency Phone Number: 713-433-4595

# I. PRODUCT IDENTIFICATION

HMIS HAZARD RATING: HEALTH = 1

FIRE = 0

REACTIVITY = 0

MANUFACTURER: Texas Brine Company, L.L.C.

Pierce Junction 3000 Feldmon Road Houston, Texas 77045

Corporate 4800 San Felipe

Houston, Texas 77056

1-800-554-8689

Chemical name:

Sodium Chloride

CAS:

7647-14-5

Synonyms:

Sodium Chloride solution, brine

Chemical Formula: NaCl

# II. HEALH HAZARD INFORMATION

**Emergency and First Aid** 

EYES: Immediately flush eyes with direct stream of water for at least 20 minutes holding the eyelids open. If irritation occurs, seek medical attention.

SKIN: Wash with soap and water.

INHALATION: If symptoms develop, remove person to fresh air.

INGESTION: Never give anything by mouth to an unconscious person. Have person drink several glasses of water then induce vomiting. Seek medical attention immediately.

# ROUTES OF EXPOSURE

Inhalation — None expected
Skin — Exposure to spray or liquid may cause irritation of skin.
Eye contact — Exposure to spray or liquid may cause irritation of eyes.

# **BRINE SOLUTION**

Ingestion - Ingestion of large amounts may cause irritation of the stomach vomiting and diarrhea. Serious salt poisoning in humans has occurred from both accidental and deliberate ingestion.

# Effects of Overexposure

Acute: May cause irritation to skin eyes and digestive tract.

Chronic: Not determined

# III. HAZARDOUS COMPONENTS

Component (	CAS	OSHA-PEL	ACGIH-TLV	%
Sodium 7 Chloride	7647-14-5	Not established	Not established	24 - 26

This product may contain trace concentrations of petroleum hydrocarbon constituents, including benzene. Laboratory analysis is available upon request.

# IV. FIRE & EXPLOSION DATA

Flash point:

Not applicable

Autoignition temperature: Not applicable

Flammable limits:

Upper

Not applicable

Lower

Not applicable

Extinguishing Media: Use agent suitable for surrounding fire. Water, water fog, dry chemical, CO2, sand or dirt may be used where this product is stored.

Special Fire Fighting Procedures: Non-flammable.

Unusual fire and explosion hazard: Not combustible. No unusual hazards.

## V. SPECIAL PROTECTION

Ventilation Requirements: Ventilation is not normally required for salt solutions. Avoid creation of mist or spray. If present, wear appropriate safety clothing and provide local exhaust systems.

Respiratory: Provide mist protection where applicable. Use NIOSH/MSHA approved respirators. Follow requirements of 29 CFR 1910.134.

# **BRINE SOLUTION**

Eye: Wear safety glasses with side shields or chemical goggles where splash hazard exists.

Gloves: Use rubber, vinyl, or neoprene gloves.

Other equipment: Eyewash facility and emergency shower should be in close proximity.

# VI. PHYSICAL DATA

Boiling point:

~218 ° F

Freezing point::

Not determined

Vapor pressure:

Not determined

Specific gravity: Solubility in water: 1.19 – 1.20 26 %

Vapor density:

Not determined

Appearance and odor:

Clear to hazy liquid with a salty odor

pH:

7.2 - 7.5

# VII. REACTIVITY DATA

Conditions contributing to instability: Under normal conditions, the material is stable.

Incompatibility: Avoid contact with strong concentrations of mineral acids; sulfuric acid, nitric acid.

Hazardous decomposition products: Hydrogen chloride gas is released on contact with strong mineral acids.

Hazardous polymerization: Will not occur.

## VIII. HANDLING & STORING

Precautions: Store in an area that is separate from strong mineral acids. Dike and vent storage tank. Use protective safety equipment as appropriate.

# IX. ENVIRONMENTAL PROCEDURES

Spill or release: Contain spill to prevent flow to sewers and streams. Pump into marked container for disposal or reclamation. Brine solutions (salt water) may be fatal to fresh water species. Brine may cause corrosion of metal components.

Waste disposal method: Dispose of spilled material in licensed landfill or as appropriate in accordance with federal, state, and local regulations.

# **BRINE SOLUTION**

# X. REGULATORY

All components listed on TSCA: Yes

DOT Proper shipping name:

Not regulated

SARA /Title III:

Not listed

OSHA regulation 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of as hazard communication program including labeling, material safety data sheets, and training.

# XI. REVISION

February 22, 2000

- 1. Update of site specific information
- 2. Supersedes 1997 Version

The information herein is given in good faith but no warranty expressed or implied is made.

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PAGE: 3
    ( DATE: 08/20/08
INDEX: A82327338
                                            ACCT: 014367001
                                            CAT NO: SB10810 PO NBR: 375829
               Has not been reported.

Section 11 - Toxicological Information
RTECS# :
CAS# 1310-73-2: WB4900000
CAS# 7732-18-5: ZC0110000
CAS# 7778-77-0: TC6615500
1.050 /1.050 4
RTECS: CAS# 1310-73-2: Draize test, rabbit, eye: 400 ug Mild; Draize test, rabbit, eye: 1% Severe; Draize test, rabbit, eye: 1% Severe; Draize test, rabbit, eye: 1
 mg/24H Severe; Draize test, rabbit, skin: 500 mg/24H
 Severe:
RTECS: CAS# 7732-18-5: Oral, rat: LD50 = >90
mL/kg;.
RTECS: CAS# 7778-77-0: Skin, rabbit: LD50 = >4640
mg/kg;.
Carcinogenicity:
           Sodium hydroxide -
Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
           Water -
Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Potassium phosphate monobasic -
Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Epidemiology:
Not available
Teratogenicity
Not available
Reproductive
Not available
Neurotoxicity
Not available
Mutagenicity:
Not available
Other:
Not available
                                    Section 12 - Ecological Information
No information available.
Section 13 - Disposal Considerations
Chemical waste generators must determine whether a discarded chemical
is classified as a hazardous waste.
US EPA guidelines for the classification determination are listed in
40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate
Classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.
                                   Section 14 - Transport Information
 US DOT
        Shipping Name:
Hazard Class:
                                              Not regulated as a hazardous material
        UN Number:
Packing Group:
 Canada TDG
Shipping Name:
Hazard Class:
UN Number:
                                              Not regulated as a hazardous material
 UN Number:
Packing Group:
Packing Group:
USA RQ: CAS# 1310-73-2: 1000 lb final RQ; 454 kg final RQ
Section 15 - Regulatory Information
        TSCA
 CAS# 1310-73-2 is listed on the TSCA Inventory.
 CAS# 7732-18-5 is listed on the TSCA Inventory.
CAS# 7778-77-0 is listed on the TSCA Inventory.
 None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules
 None of the chemicals in this product are under a Chemical Test Rule.
 Section 12b
None of the chemicals are listed under TSCA Section 12b.
 TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs
 CAS# 1310-73-2: 1000 lb final RQ: 454 kg final RQ
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
             SARA Codes
 CAS # 1310-73-2: acute, reactive.
CAS # 7778-77-0: acute.
             Section 313
 No chemicals are reportable under Section 313.
Clean Air Act:
 This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.
         Clean Water Act:
  CAS# 1310-73-2 is listed as a Hazardous Substance under the CWA.
 None of the chemicals in this product are listed as Priority
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                                                                  ACCT: 014367001
            DATE: 08/20/08
  INDEX: A82327338 CAT NO. SB10810
                                                                                                                   PO NBR: 375829
Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants
under the CWA.
OTATE
           Sodium hydroxide can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota,
            Massachusetts.
           Water is not present on state lists from CA, PA, MN, MA, FL, or NJ. Potassium phosphate monobasic is not present on state lists from CA,
PA, MN, MA, FL, or NJ.
California Prop 65
California No Significant Risk Level:
None of the chemicals in this product are listed.
European/International Regulations
European Labeling in Accordance with EC Directives Hazard Symbols:Not available
Risk Phrases:
Safety Phrases:
                                                    S 24/25 Avoid contact with skin and eyes.
WGK (Water Danger/Protection)
                       CAS# 1310-73-2: 1
CAS# 7732-18-5: Not available
CAS# 7778-77-0: 1
       Canada
Canada
CAS# 1310-73-2 is listed on Canada's DSL List
CAS# 7732-18-5 is listed on Canada's DSL List
CAS# 7778-77-0 is listed on Canada's DSL List
Canadian WHMIS Classifications: Not controlled.
This product has been classified in accordance with the hazard
criteria of the Controlled Products Regulations and the MSDS
contains all of the information required by those regulations.
CAS# 1310-73-2 is listed on Canada's Ingredient Disclosure
 CAS# 7732-18-5 is not listed on Canada's Ingredient
Disclosure List.
|CAS# 7778-77-0 is not listed on Canada's Ingredient
Disclosure List.
                                                         Section 16 - Other Information
            MSDS Creation Date:
            11/30/1998
Revision #6 Date
              9/11/2007
            Revisions were made in Sections:
          8, 14
The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.
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PAGE. 3
                                     08/20/08
                                                                                 ACCT: 014367001
CAT NO: 8B9810
                INDEX: A82327338
                                                                                                                                  PO NBR: 375829
                                                                  Wear appropriate gloves to prevent skin exposure.
    Clothing:
                                                                  Wear appropriate protective clothing to minimize contact with skin,
   Respirators:
                                                                 Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. ion 9 - Physical and Chemical Properties
                                                    Section 9
    Physical State:
                                                                               Liquid
   Color:
                                                                                clear, colorless
odorless
                                                                                4.0
   Vapor Pressure:
Vapor Density:
                                                                                Not available
                                                                               Not available
Not available
    Evaporation Rate:
   Viscosity:
Boiling Point:
                                                                                Not available
    Freezing/Melting Point:
                                                                                Not available
  Decomposition Temperature:
Solubility in water:
Specific Gravity/Density:
Molecular Formula:
                                                                              Not available soluble
                                                                               1.0054
                                                                                Solution
   Molecular Weight:
                                                              Section 10 - Stability and Reactivity
   Chemical Stability:
                             Stable at room temperature in closed containers under normal storage and handling conditions.
    Conditions to Avoid:
   None reported.
Incompatibilities with Other Materials
None reported.
   Hazardous Decomposition Products Formaldehyde.
   Hazardous Polymerization
                              Has not been reported.
                                                           Section 11 - Toxicological Information
   RTECS# .
   CAS# 50-00-0: LP8925000
CAS# 67-56-1: PC1400000
CAS# 877-24-7: CZ4326000
CAS# 7732-18-5: ZC0110000
LD50/LC50:
LDSO/LCSO:
RTECS: CAS# 50-00-0: Draize test, rabbit, eye: 750 ug/24H
Severe; Draize test, rabbit, eye: 750 ug severe; Draize
test, rabbit, eye: 10 mg Severe; Draize test, rabbit, eye: 37%
Severe; Draize test, rabbit, skin: 2 mg/24H Severe; Draize
test, rabbit, skin: 50 mg/24H Moderate; Inhalation, mouse: LCSO
# 450 mg/m3/4H; Inhalation, mouse: LCSO = 505 mg/m3/2H;
Inhalation, rat: LCSO = 203 mg/m3; Inhalation, rat: LCSO = 578
mg/m3/2H; Inhalation, rat: LCSO = 250 ppm/2H; Oral, mouse:
LDSO = 42 mg/kg; Oral, mouse: LDSO = 385 mg/kg; Oral, mouse:
LDSO = 500 mg/kg; Oral, rat: LDSO = 270 mg/kg; Oral, rat:
LDSO = 500 mg/kg; Skin, rabbit: LDSO = 270 uL/kg; Skin,
rabbit: LDSO = 270 mg/kg;
RTECS: CAS# 67-56-1: Draize test, rabbit, eye: 40 mg
Moderate; Draize test, rabbit, eye: 100 mg/24H Moderate;
Draize test, rabbit, skin: 20 mg/24H Moderate; Inhalation,
rabbit: LCSO = 81000 mg/m3/4H; Inhalation, rat: LCSO = 64000
ppm/4H; Oral, mouse: LDSO = 7300 mg/kg; Oral, rabbit: LDSO =
LDSO = 15800 mg/kg;
TECS: CAS# 67-36-30 mg/kg; Oral, rabbit: LDSO = 15800 mg/kg;
TEST = 15500 mg/kg;
 14200 mg/kg; Orat, lat: LD50 = 55000 mg/kg; CL1, LD50 = 15800 mg/kg; RTECS: CAS# 877-24-7: Dermal, guines pig: LD50 = >1 gm/kg; Oral, rat: LD50 = >3200 mg/kg; RTECS: CAS# 7732-18-5: Oral, rat: LD50 = >90
Carcinogenicity:
Formaldehyde -
ACGIH: A2 - Suspected Human Carcinogen
California: carcinogen, initial date 1/1/88 (gas)
NTP: Suspect carcinogen
IARC: Group 1 carcinogen
Hethyl alcohol
Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Potassium Hydrogen Phthalate -
Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
  Carcinogenicity
  Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
 Water -
Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
  Epidemiology:
  No information found
  Teratogenicity:
No information found
  Reproductive:
  No information found
 Neurotoxicity:
No information found
  Mutagenicity:
```

```
PAGE: 4
                                                                                              014367001
              DATE: 08/20/08
                                                                          ACCT!
             INDEX: A82327338
                                                                          CAT NO: SB9810
                                                                                                                                        PO NBR: 375829
 No information found
 Other:
 Not available
                                                           Section 12 - Ecological Information
 Not available
Not available

Section 13 - Disposal Considerations
Chemical waste generators must determine whether a discarded chemical
is classified as a hazardous waste.
US EPA guidelines for the classification determination are listed in
40 CFR Parts 261.3. Additionally, waste generators must consult state
and local hazardous waste regulations to ensure complete and accurate
 classification.
Classification.
RCRA P-Series: None listed.
RCRA U-Series: CAS# 50-00-0: waste number U122. CAS#
67-56-1: waste number U154 (Ignitable waste).
Section 14 - Transport Information
              Shipping Name:
Hazard Class:
                                                                             Not Regulated
              UN Number:
              Packing Group
 Canada TDG
              Shipping Name:
Hazard Class:
                                                                             Not regulated as a hazardous material
              UN Number:
Packing Group:
USA RQ: CAS# 50-00-0: 100 lb final RQ; 45.4 kg final RQ
USA RQ: CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ
Section 15 - Regulatory Information
TSCA
CAS# 50-00-0 is listed on the TSCA Inventory.
CAS# 67-56-1 is listed on the TSCA Inventory.
CAS# 877-24-7 is listed on the TSCA Inventory.
CAS# 877-24-7 is listed on the TSCA Inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
 None of the chemicals in this product are under a Chemical Test Rule.
Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 50-00-0: 100 lb final RQ: 45.4 kg final RQ

CAS# 67-56-1: 5000 lb final RQ: 270 kg final RQ

SARA Section 302 Extremely Hazardous Substances

CAS# 50-00-0: 500 lb TPQ

SARA Codes

CAS# 50-00-0: acute, chronic
                     Section 12b
CAS # 50-00-0: acute, chronic.
CAS # 67-56-1: acute, flammable.
CAS # 877-24-7: acute.
Section 313
 This material contains Formaldehyde (CAS# 50-00-0, 0 05*), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.
 This chemical is not at a high enough concentration to be reportable
 under Section 313.
Clean Air Act:

CAS# 50-00-0 is listed as a hazardous air pollutant (HAP).

CAS# 67-56-1 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depletors.

Clean Water Act.
              Clean Water Act:
CAS# 50-00-0 is listed as a Hazardous Substance under the CWA.
None of the chemicals in this product are listed as Priority
Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants
under the CWA.
 STATE
             Formaldehyde can be found on the following state right to know lists:
California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
Methyl alcohol can be found on the following state right to know
lists: California, New Jersey, Pennsylvania, Minnesota,
              Massachusetts.
              Potassium Hydrogen Phthalate is not present on state lists from CA.
              PA, MN, MA, FL, or NJ.
 Water is not present on state lists from CA, PA, MN, MA, FL, or NJ. California Prop 65
 California Frop 65
The following statement(s) is (are) made in order to comply with the California Safe Drinking Water Act:
WARNING: This product contains Formaldehyde, a chemical known to the state of California to cause cancer.
California No Significant Risk Level:
CAS# 50-00-0: 40 5g/day NSRL

European/International Regulations
European Labeling in Accordance with EC Directives
```

315

Hazard Symbols: Not available

316



# Material Safety Data Sheet

# Section 1. Product and Company Identification

**Product Name** 

**Butyl Alcohol** 

**Product Code B10061** 

Manufacturer

EMD Chemicals Inc.

**Effective Date** 

2/22/2005

P.O. Box 70

480 Democrat Road Gibbstown, NJ 08027

Prior to January 1, 2003 EMD

Chemicals Inc. was EM

Industries, Inc. or EM Science, Division of EM Industries, Inc.

For More Information Call

856-423-6300 Technical Service

Monday-Friday: 8:00 AM - 5:00 PM

In Case of Emergency Call

800-424-9300 CHEMTREC (USA)

613-996-6666 CANUTEC (Canada)

24 Hours/Day: 7 Days/Week

Synonym Material Uses

N-1-BUTANOL ses Analytical reagent.

Chemical

Aliphatic alcohol.

Family

# Section 2. Composition and Information on Ingredients

Component

CAS#

% by

Weight

1-Butanol

71-36-3

100

# Section 3. Hazards Identification

Physical State and

Liquid. (Colorless.)

**Appearance** 

Emergency

WARNING!

Overview

FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE.

HARMFUL IF INHALED OR SWALLOWED.

CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CAUSES DAMAGE TO THE FOLLOWING ORGANS: MUCOUS MEMBRANES, RESPIRATORY TRACT, SKIN, CENTRAL NERVOUS

SYSTEM, EYE, LENS OR CORNEA.

**Routes of Entry** 

Inhalation. Ingestion.

**Potential Acute Health Effects** 

Eyes Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized

by redness, watering, and itching.

Skin Hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Non-permeator by skin.

Inhalation Hazardous in case of inhalation (lung irritant).

Ingestion Hazardous in case of ingestion.

**Potential Chronic Health Effects** 

Carcinogenic Effects This material is not known to cause cancer in animals or humans.

Additional information See Toxicological Information (section 11)

**Medical Conditions** 

Repeated exposure to a highly toxic material may produce general deterioration of

Aggravated by

Overexposure:

health by an accumulation in one or many human organs.

# **Section 4. First Aid Measures**

**Eye Contact** 

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get

medical attention immediately.

Skin Contact

Inhalation

Ingestion

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an available of Cald restaurated was a Wash slathing before reposit

with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If

breathing is difficult, give oxygen. Get medical attention immediately. If swallowed, do not induce vomiting unless directed to do so by medical

personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

# **Section 5. Fire Fighting Measures**

Flammability of the Product will burn.

**Product** 

**Auto-ignition** 

342.9°C (649.2°F)

*emperature* 

Flash Points

Closed cup: 28.9°C (84°F).

Flammable Limits

LOWER: 1.4% UPPER: 11.2%

Products of

These products are carbon oxides (CO, CO2).

Combustion

'ire Hazards in

Flammable in presence of open flames, sparks and static discharge, of heat, of

Presence of Various oxidizing materials.

**Substances** 

**Explosion Hazards** 

in Presence of

Various Substances

Risks of explosion of the product in presence of static discharge:

Flammable in presence of open flames, sparks and static discharge.

Risks of explosion of the product in presence of mechanical impact: No.

Fire Fighting Media

SMALL FIRE: Use DRY chemical powder.

and Instructions

LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with

water jet in order to prevent pressure build-up, autoignition or explosion.

**Protective Clothing** 

(Fire)

Be sure to use an approved/certified respirator or equivalent.

Fire Hazards

Special Remarks on Vapor may travel considerable distance to source of ignition and flash back.

Special Remarks on Not available.

**Explosion Hazards** 

# Section 6. Accidental Release Measures

Small Spill and

Leak

Dilute with water and mop up, or absorb with an inert dry material and place in an

appropriate waste disposal container.

Large Spill and

eak

Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local

authorities.

Spill Kit Information The following EMD Chemicals Inc. SpillSolv ® absorbent is recommended for

this product: SX1330 Solvent Treatment Kit

# Section 7. Handling and Storage

Handling

Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. Do not ingest. Do not get in eyes, on skin, or on clothing.

Storage

Keep container in a cool, well-ventilated area.

# Section 8. Exposure Controls/Personal Protection

Engineering **Controls** 

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection

Eyes Splash goggles. Body Lab coat.

Respiratory Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

Wear appropriate respirator when ventilation is inadequate.

Hands Gloves.

Feet Not applicable.

**Protective** Clothing (Pictograms)



**Personal Protection** in Case of a Large Spill

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Product Name** 1-Butanol

**Exposure Limits** 

BAUA (Germany, 1997).

Spitzenbegrenzung: 1200 mg/m3 Spitzenbegrenzung: 400 ppm TWA: 300 mg/m3 8 hour(s). TWA: 100 ppm 8 hour(s).

DK-Arbejdstylsinet (Denmark, 1996). Skin

Loftværdi: 150 mg/m3 Loftværdi: 50 ppm

GV: 150 mg/m3 8 hour(s). GV: 50 ppm 8 hour(s).

National Authority for Occupational Safety/Health (Ireland,

1999). Skin

STEL: 150 mg/m3 15 minute(s). STEL: 50 ppm 15 minute(s).

EH40-OES (United Kingdom (UK), 1997). Skin

STEL: 154 mg/m3 15 minute(s). STEL: 50 ppm 15 minute(s).

ACGIH (United States, 1994). Skin

CEIL: 152 mg/m3 CEIL: 50 ppm

NIOSH REL (United States, 1994). Skin

CEIL: 150 mg/m3 CEIL: 50 ppm

OSHA Final Rule (United States, 1989). Skin

CEIL: 150 mg/m3 CEIL: 50 ppm

# Section 9. Physical and Chemical Properties

Odor

Alcohol like.

Color

Colorless. Clear.

"hysical State and

Liquid. (Colorless.)

Appearance

Molecular Weight

74.14 g/mole

Molecular Formula C4-H10-O

pH

Not available.

Boiling/Condensation 117.83°C (244.1°F)

'oint

Melting/Freezing

-88.83°C (-127.9°F)

**Point** 

Critical

289.9°C (553.8°F)

**Temperature** 

**Specific Gravity** 

0.81 (Water = 1)

Vapor Pressure

Not available.

Vapor Density

2.6 (Air = 1)

**Odor Threshold** 

25 ppm

**Evaporation Rate** 

0.44 compared to(n-BUTYL ACETATE=1)

LogKow

Not available.

**Solubility** 

Partially soluble in water.

# Section 10. Stability and Reactivity

Stability and

The product is stable.

Reactivity

Conditions of

Not available.

Instability

Incompatibility with Reactive with metals, acids, alkalis.

Various Substances

Rem/Incompatibility Not available.

lazardous

carbon oxides (CO, CO2)

Decomposition

**Products** 

Hazardous

Will not occur.

**Polymerization** 

# **Section 11. Toxicological Information**

Butyl Alcohol

EO1400000

RTECS Number:

**Toxicity** 

Acute oral toxicity (LD50): 790 mg/kg [Rat].

Acute dermal toxicity (LD50): 3400 mg/kg [Rabbit].

Acute toxicity of the vapor (LC50): 8000 ppm 4 hour(s) [Rat].

**Chronic Effects on** 

Not available.

Humans

Acute Effects on

Humans

Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching. Hazardous in case of skin contact (irritant). Skin

inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering, Non-permeator by skin. Hazardous in case of inhalation (lung irritant).

Hazardous in case of ingestion.

Synergetic Products Not available.

Toxicologically)

Irritancy

Draize Test (Rabbit):

Skin: 20mg/24h. Reaction: Moderate.

Eye: 2 mg/24H Severe

Sensitization

Not available.

Carcinogenic Effects This material is not known to cause cancer in animals or humans.

Toxicity to

Tests on laboratory animals for reproductive effects are cited in Registry of Toxic

Reproductive

Effects on Chemical Substances (RTECS).

System

**Teratogenic Effects** 

Not available.

**Mutagenic Effects** 

Tests on laboratory animals for mutagenic effects are cited in Registry of Toxic

Effects of Chemical Substances (RTECS).

# **Section 12. Ecological Information**

**Ecotoxicity** 

Not available.

**BOD5** and **COD** 

Not available.

Toxicity of the

The products of degradation are less toxic than the product itself.

Products of Biodegradation

# **Section 13. Disposal Considerations**

**EPA Waste Number** U031 D001

reatment!

Incineration, fuels blending or recycle. Contact your local permitted waste disposal

site (TSD) for permissible treatment sites. Always contact a permitted waste disposal (TSD) to assure compliance with all current local, state, and Federal

Regulations.

# **Section 14. Transport Information**

**DOT Classification** 

Proper Shipping Name: BUTANOL

Hazard Class: 3 UN number: UN1120 Packing Group: III RQ: 5000 lbs. (2268 kg)

**TDG Classification** 

Not available. Not available.

IMO/IMDG Classification

ICAO/IATA

Classification

Not available.

# **Section 15. Regulatory Information**

J.S. Federal Regulations

TSCA 4(a) final test rules: 1-Butanol TSCA 8(b) inventory: 1-Butanol

TSCA 12(b) one time export: 1-Butanol

Changed Since Last + Revision otice to Reader

The statements contained herein are based upon technical data that EMD Chemicals Inc. believes to be reliable, are offered for information purposes only and as a guide to the appropriate precautionary and emergency handling of the material by a properly trained person having the necessary technical skills. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use, storage and disposal of these materials and the safety and health of employees and customers and the protection of the environment. EMD CHEMICALS INC. MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, WITH RESPECT TO THE INFORMATION HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS.



# SECTION 1 - PRODUCT IDENTIFICATION

Common Name: Biodiesel

Chemical Name: Fatty Acid Methyl Ester Formula: C14-C24 Methyl Esters Chemical Family: CAS No. 67784-80-9

# SECTION 2 - INGREDIENTS AND HAZARDOUS CLASSIFICATION

Typical Composition:

Alkyl C14-C24 Methyl Esters OSHAPEL

ACCHITLY

Percent 99

none

This product contains no hazardous materials.

SARA Title III. Section 313: Not Listed

# SECTION 3 - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: >400' F

Vapor Pressure (mm Hg): <5 mm Hg @ 72' F

Evaporation Rate: less than .005 versus (Butyl Acetate = 1)

Solubility in Water: insoluble

Appearance and Odor: light to dark yellow clear liquid / light musty odor

# SECTION 4-FIRE AND EXPLOSION HAZARD DATA

Fiash Point (method used): 321 F PMCC

Fiammable Limits: N/A

HMIS Rating: Health: 0

Fire: 1

Reactivity: 0

Extinguishing Media: Use water spray, dry chemical, foam or carbon dioxide.

Special Fire Fighting Procedures: Treat as oil fire.

Unusual Fire and Explosion hazards: Rags soaked with any solvent present a fire hazard and should be stored in an approved UL listed covered container.

-PAGE 1 OF 2 -

PAGE 01

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# SECTION 5 - REACTIVITY DATA

Reactivity: Stable

Conditions to Avoid: Non Known

Incompatibility (malerials to avoid): Strong oxidizing agents

Hazardous Decomposition or By-products: Carbon monoxide, carbon dioxide

Hazardous Polymerization: Will not occur

# SECTION 6 - HEALTH HAZARD DATA

**Emergency First Aid Procedures:** 

Ingestion: Rinse mouth with water, contact physician Eyes: Rinse with water 15 minutes, contact physician

Skin; Rinse with soap and water

# SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in case material is released or spilled:

Avoid uncontrolled releases. Contain spilled material. Transfer to secure

containers. Use absorbent material if necessary.

Disposal: Dispose of according to Federal, state and/or local regulations Precautions to be Taken in Handling and Storing: Avoid open flames

Other Precautions: None

## SECTION 8 - CONTROL MEASURES

Respiratory Protection: None required

Ventilation: mechanical Protective Gloves: Rubber

Eye Protection: Safety glasses / splash goggles

Other Protective Clothing or Equipment: None required

# SECTION 9 - TRANSPORTATION

DOT Code: N/A

DOT Shipping Name: Fatty acid esters
Other Regulatory: Listed in TSCA inventory

The information provided is believed to be accurate and represents the best information currently available to us. However, we make no warrantly of merchantability, or suitability for an intended use, or any other warrantly, expressed or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the surability of the information for their particular purposes.

Biodiesel inoustries. Inc.

11: Saguaro Lane. Marathon, FL 33050 - 305-743-3942 - Fax 305-743-3943

Online at http://www.pipeune.to/biodiesel - email rteall@adl.com

- Page 2 of 2 -

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Document Title Category Document Date Document Type Action Type MSDS Sheet for Biodiesel

PAGE 03

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SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Manufacturer: AccuStandard, Inc. 125 Market Street

Date MSDS Printed: 6/20/2007 Preparation Date: 2/10/2006

New Haven, CT 06513

Information Phone Number: 203-786-5290

Emergency Phone Number: 203-786-5290

Hours: Mon. to Fri. 8am-5pm

Catalog Number: PS-151C-04 Product Name: 1,3-Butanediol

Synonyms: 1,3-Butanediol; Butane-1,3-diol; Butylene glycol; 1,3-Dihydroxybutane; Methyltrimethylene glycol

Formula: C,H,O,

Molecular Weight: 90.12

### SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

			- 1			ACGIH-	TLV (mg/m3)	OSHA-P	EL (mg/m3)
Component(s)	( I	)		CAS#	Appr. %	TWA	STEL skin	TWA	STEL sk
1.3-Butanediol				107-88-0	100	1			

MATERIAL SAFETY DATA SHEET

### SECTION 3 - HAZARDS IDENTIFICATION

Symptoms of Exposure:

May be irritating to eyes, skin, mucous membranes and upper respiratory system.

To the best of our knowledge the chemical, physical and toxicological properties of the component ingredients have not been thoroughly investigated.

Potential Health Effects:

May be harmful if inhaled, absorbed through the skin, or swallowed.

Routes of Entry:

Inhalation, ingestion or skin contact.

Catalog Number PS-151C-04

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For full page MSDS please visit www.accustandard.com

### Carcinogenicity:

This product is or contains a component that is not listed (ACGIH, IARC, NTP, OSHA) as a cancer causing agent.

### **SECTION 4 - FIRST AID MEASURES**

### Emergency First Aid:

Get medical assistance for all cases of overexposure.

Skin contact: Immediately wash skin with soap and plenty of water. Remove contaminated clothing, Get medical attention if symptoms occur. Wash clothing before reuse.

Eye contact: Immediately flush with plenty of water. After initial flushing, remove and contact lenses and continue flushing for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.

Ingestion: Drink water and induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

### SECTION 5 - FIRE FIGHTING MEASURES

### Flammable Properties:

Flash Point: 226.4 °F (108 °C) Flammable Limits LEL (%): 1,9 Flammable Limits UEL (%): N/A Autoignition Temperature: 394 °C

During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

### Extinguishing Media:

Use alcohol foam, carbon dioxide, dry chemical, or water spray when fighting fires involving this material.

### Fire Fighting Procedures:

As in any fire, wear self-contained breathing apparatus pressure demand, MSHA/NIOSH (approved or equivalent) and full protective

### SECTION 6 - ACCIDENTAL RELEASE MEASURES

### Spill Response:

Wear a self-contained breathing apparatus and appropriate Personal protection. Prevent contact with skin or eyes. Ventilate area. Stop leak if you can do so without risk. Absorb on sand or vermiculite, take up and containerize for proper disposal. Flush spill area with water. Comply with Federal, State, and local regulations.

### SECTION 7 - HANDLING AND STORAGE

Store in a tighly closed container.

Store in a cool area away from ignition sources and oxidizers

Material is hygroscopic.

Do not breathe vapor.

Do not get in eyes, on skin or clothing.

Avoid prolonged or repeated exposure,

This product should only by used by persons trained in the safe handling of hazardous chemicals.

Catalog Number: PS-151C-04

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Page 2 Preparation Date: 2/10/2006

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# EPAHO011000454

### SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls and Personal Protection Equipment (PPE):

Respiratory Protection: If workplace exposure limit(s) of product or any component is exceeded (see TLV/PEL), a NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure type) under specified conditions (see your safety equipment supplier). Engineering and/or administrative controls should be implemented to reduce exposure.

Material should be handled or transferred in an approved fume hood or with adequate ventilation.

Compatible chemical-resistant protective gloves must be worn to prevent skin contact.

Safety glasses with side shields must be worn at all times.

General Hygiene Considerations:

Wash thoroughly after handling. Do not take internally. Eye wash and safety equipment should be readily available.

### SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Liquid

Odor: N/A

pH: 6.0 - 7.0 (20 °C)

Vapor Pressure: 0.06 mmHg (20 °C) Vapor Density (Air = 1): 3.1 g/l

vapor Density (Att = 1). 3.1 gr

Boiling Point: 204 - 207 °C

Melting Point: N/A

Solubility in Water (%): N/A

Specific Gravity (H₂O = 1): 1.004 g/cm³

Flash Point: 226.4 °F (108 °C) (cc)

Explosion Limits (%): 1.9 to N/A

Autoignition Temperature: 394 °C

Percent Volatile: N/A

Evaporation Rate (BuAc = 1): N/A

Molecular Weight: 90.12

Molecular Formula: C,H,O,

### SECTION 10 - STABILITY AND REACTIVITY

Stability: Stable

Conditions To Avoid: Moisture

Materials To Avoid: Oxidizers

Acid chlorides; Acid anhydrides; Chloroformates; Reducing agents

Hazardous Decomposition: Carbon oxides

Tazardous Decomposition. Caroon oxi

Hazardous Polymerization Catalog Number: PS-151C-04

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Preparation Date: 2/10/2006

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Preparation Date: 2/10/2006

-04

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SECTION 11 - TOXICOLOGICAL INFORMATION

See section 3 for specific toxicological information for the ingredients of this product.

SECTION 12 - ECOLOGICAL INFORMATION

By complying with sections 6 and 7 there will be no release to the environment.

SECTION 13 - DISPOSAL CONSIDERATIONS

Recycle or incinerate at any EPA approved facility or dispose in compliance with Federal, State and local regulations. Empty containers must be triple-rinsed prior to disposal.

SECTION 14 - TRANSPORT INFORMATION

DOT UN Number: NR

Shipping Class: NR

Packing Group: NR

IRRITANT

117

SECTION 15 - REGULATORY INFORMATION

In addition to Federal and state regulations, local regulations may apply. Check with your local regulatory authorities.

SECTION 16 - OTHER INFORMATION

This document has been designed to meet the requirements of OSHA, ANSI and CHIPs regulations.

The statements contained herein are offered for informational purposes only and are based on technical data that we believe to be accurate. It is intended for use only by persons having the necessary technical skill and at their own discretion and risk. Since conditions and manner of use are outside our control, we make

NO WARRANTY, EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE.

Legend: N/A = Not Available ND = Not Determined NR = Not regulated

Catalog Number:

PS-151C-04

____

I. .



Product name:

Bay City Mixed Vinyl Esters

MSDS number: Material number: 80572 80572 07/29/2005

Material number Published date:

# **MATERIAL SAFETY DATA SHEET**

# 

**Product:** 

Bay City Mixed Vinyl Esters

MSDS number:

80572

Material number:

80572

## Manufacturer name and address:

Celanese Ltd.

1601 W. LBJ Freeway P.O. Box 819005 Dallas, TX 75381-9006 United States

Phone: 972 443 4000

Internet: www.celanesechemicals.us

Transportation emergency phone numbers:

....-In USA, call 800 424 9300

Outside USA, call 703 527 3887, collect calls accepted

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Component	CAS Number	Percent %	OSHA hezard		
Mile-comp 197 5 10 00 00 10 10 10 10 10 10 10 10 10 10			calegory:		
ACETIC ACID	64-19-7	20 - 40%	Hazardous		
ETHYLENE GLYCOL DIACETATE	111-55-7	10 - 20%	Hazardous		
ACETOXY ACETIC ACID	13831-30-6	20- 40%	Hazardous		
Vinyl Acetoxy Acetate	159335-88-3	1 - 10	Hazardous		
Cis & trans isomers of Diacetoxy Ethylene	17366-23-9	1 - 10	Hazardous		
ETHYLIDENE DIACETATE	542-10-9	1 - 5%	Hazardous		

# **Emergency Overview:**

# DANGER!

- ·Causes skin, eye and digestive tract burns.
- -Causes respiratory tract irritation.
- ·Flammable liquid and vapor.

Transportation emergency:

800 424 9300

CHEMTREC, 24 hrs/day

703 527 3887

Outside USA, collect calls accepted, 24 hrs/day

Product information:

800 835 5235

1 of 14

FROM : Baker CORPBHouston FRX NO. :2814701457

09/19/2008 14:52 FAX 9792414228

Celanese CR7

₩3003/015



Product name:

Bay City Mixed Vinyl Esters

MSDS number: Material number: 80572 80572

Published date:

07/29/2006

Product Description

Appearance:

Dark brown liquid.

Odor:

Strong, acrid, vinegar-like odor.

Potential health effects

Routes of exposure:

Skin, eyes, inhalation, ingestion.

immechate effects:

Skin:

Causes skin burns. May cause allergic skin reaction. May be harmful if absorbed through skin. Symptoms of exposure may include: Redness or discoloration, swelling, itching, burning or blistering of skin. Central nervous system depression with headache, stupor, uncoordinated or strange behavior or unconsciousness.

Eyes:

Exposure to vapors Causes eye irritation. Exposure to liquid Causes eye burns. Symptoms of exposure may include: Eye irritation, burning sensation, pain, watering.

and/or change of vision.

09/19/2008 14:51 FAX 9792414228

Celanose CR7_

Ø 002/015



Product name:

Bay City Mixed Vinyl Esters

MSDS number: Material number: Published date:

80572 80572

Medical conditions which may

07/29/2005

be aggravated by exposure:

Significant exposure to this chemical may adversely affect people with acute or

chronic disease of the: Respiratory Tract

Skin Kidnevs

Eyes

Central nervous system

For further information, see:

Section 4 - First Aid Measures.

Section 5 - Fire Fighting Measures Section 6 - Accidental Release Measures Section 8 - Exposure Controls/Personal Protection

Section 9 - Physical and Chemical Properties

Section 10 - Stability and Reactivity

Skin:

Immediately flush skin with plenty of water for at least 15 minutes while removing

contaminated clothing and shoes. Get medical attention immediately. Wash clothing

before reuse. Destroy contaminated shoes.

Eyes:

Immediately flush eyes with plenty of water for at least 15 minutes. If easy to do,

remove contact lenses, if worn. Get medical attention immediately.

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult,

give oxygen. Cafl a physician.

Ingestion:

DO NOT induce vamiling. Get medical attention immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious...

person.

Note to physician:

Observe for latent pulmonary edema.

S S Em Edhund Medeura

NFPA:

Health: 3 Flammability: 2 Reactivity: 0

Flammable properties

Flash point (test method):

115 F - 150 F ( 46.1 - 65.6 C) (Closed cup)

Flammable limits in air, % by volume:

Products of combustion:

Carbon Monoxide.

Transportation emergency:

800 424 9300 703 527 3887 CHEMTREC, 24 hrs/day

Product information:

800 835 5235

Outside USA, collect calls accepted, 24 hrs/day

3 of 14

FAX NO. :2814701457

FROM : Baker CORPOHOUSton



Product name: Bay City Mixed Vinyl Esters MSDS number: 80572 Material number: 80572 Published date: 07/29/2005

Extinguishing Media: Use CO₂ or dry chemical for small fires. Use aqueous film forming foam for large

Fire Fighting Instructions: Water spray should be used to cool fire-exposed structures and vessels. Water may be used to blanket fire. Water must be gently applied to the liquid surface, preferably with a fine spray or fog nozzle. Keep personnel removed from and upwind of fire. If

potential for exposure to vapors or products of combustion exists, wear full fire fighting turnout gear and NIOSH approved self-contained breathing apparatus.

Oxidizing chemicals may accelerate the burning rate in a fire situation,

Fire Fighting

Environmental Concerns:

Water run-off and vapor cloud may be corrosive. Dike and collect water used to fight fire for neutralization before release. Water streams should not be directed to the liquid, as this will cause the liquid to boil and generate more vapor. Thoroughly decontaminate bunker gear and other fire-fighting equipment before re-use.

# Spill or Leak Instructions

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind; keep out of low areas. Isolate for 800 meters or 0.6 miles in all directions if tank, rail car, or tank truck in involved in fire. Evacuate downwind areas as conditions warrant to prevent exposure and to allow vapors or furnes to dissipate. Spills may expose downwind areas to toxic or flammable concentrations over considerable distances in some cases. Eliminate ignition sources, See Section 8 for appropriate personal protective equipment. Contain spill with dikes of soil or nonflammable absorbant to minimize contaminated area, if fire potential exists, blanket spill with alcohol type aqueous film-forming foam or use water fog stream to disperse vapors. Avoid run-off into storm sewers and ditches leading to waterways. If required, notify state and local authorities. Place leaking containers in wall-ventilated area. Neutralize with lime or sodium bicarbonate. Clean up small spills by using a nonflammable absorbent or flushing sparingly with water. Contain larger spills with nonflammable diking or absorbent. Clean up by vacuuming or sweeping.

Within the United States, call the National Response Center (800-424-8802) and appropriate state and local authorities if the quantity released over 24 hours is equal to or greater than the reportable quantity listed below: 20,000 lbs. of the material as is, based on a Reportable Quantity of 5,000 lbs. of acetic acid.

Transportation amergency:

800 424 9300

CHEMTREC, 24 hre/day

703 527 3887

Outside USA, collect calls accepted, 24 hrs/day

Product Information:

800 835 5235

4 of 14

A STREET OF STREET

PI/74 W460:20 8002 61 'das

FAX NO. :2814701457

LKOW : Baker CORPOHouston



Product name: MSDS number: Material number: Published date: Bay City Mixed Vinyl Esters

80572 80572

Handling:

07/29/2005
Use with adequate ventilation. Keep containers closed when not in use. Always open containers slowly to allow any excess pressure to vent. Avoid breathing vapor.

Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling. Decontaminate soiled clothing thoroughly before re-use. Destroy

contaminated leather clothing.

This product may generate a static charge. Ground/bond equipment when transferring material to prevent static accumulation. Electrical equipment and circuits in all storage and handling must conform to requirements of National Electric Code

(Article 500 and 501) for hazardous location.

Storage:

Do not store with incompatible materials. See Section 10. Stability and Reactivity.

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**Engineering Controls:** 

General or dilution ventilation is frequently insufficient as the sole means of

controlling employee exposure. Local ventilation is usually preferred.

**Protective Equipment** 

A safety shower and eyebath should be readily available.

Skin protection:

Wear impervious clothing and gloves to prevent contact. Butyl rubber is

recommended. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for

all chemicals present.

Eye/face protection:

Wear chemical goggles when there is a reasonable chance of eye contact. In addition to goggles, wear a face shield if there is a reasonable chance for splash to

the face.

Transportation emergency:

600 424 9300 703 527 3887 CHEMTREC, 24 hrs/day

Product information:

800 835 5235

Outside USA, collect calls accepted, 24 hrs/day

5 of 14

FAX NO. :2814701457

FROM : Baker CORPBHouston



Product name: Bay City Mixed Vinyl Esters

MSDS number: 80572

Material number: 80572

Published date: 07/29/2005

Respiratory protection:

Based on workplace contaminant level and working limits of the respirator, use a respirator approved by NIOSH. The following is the minimum recommended equipment for an occupational exposure level. To estimate an occupational exposure level see Section 3, Section 8 and Section 11.

For concentrations > 1 and < 10 times the occupational exposure level: Use air-purifying respirator with full facepiece and organic vapor cartridge(s) or air-purifying full facepiece respirator with an organic vapor cantater or a full facepiece powered air-purifying respirator fitted with organic vapor cartridge(s). The air purifying element must-have an end of service life-indicator, or a documented change out-schedule must be established. Otherwise, use supplied air.

For concentrations more than 10 times the occupational exposure level and less than the lower of either 100 times the occupational exposure level or the IDLH: Use Type C full facepiece supplied-air respirator operated in positive-pressure or continuous-flow mode.

For concentrations > 100 times the occupational exposure level or greater than the IDLH level or unknown concentrations (such as in emergencies): Use self-contained breathing apparatus with full faceplece in positive-pressure mode or Type C positive-pressure full faceplece supplied-air respirator with an auxiliary positive-pressure self-contained breathing apparatus escape system.

For escape: Use self-contained breathing apparatus with full facepiece or any respirator specifically approved for escape.

# Exposure guidelines

Component	CAS Number	Percent %	ACGIH TWA	ACGIH STEL	ACGIH CEILING	OSHA TWA	OSHA STEL	OSHA CEILING	Celanoso WEL *	Mexico TWA	Mexico STEL	Mexico
ACETIC ACID	64-19-7	20 - 40%	10 ppm	16 ppm	-	10 ppm	-	-	*	10 ppm	15 ppm	
ETHYLENE GLYCOL DIACETATE	111-55-7	10 - 20%		•		ut.	-	-		•		-
ACETOXY ACETIC ACID	13831-30- 6	20- 40%	-	-	-			-	<u>.</u>			
Vinyi Acetoxy Acetate	159336- 88-3	1-10	•	-	-	-	•	-		-	•	•
Cls & trans isomers of Diacetoxy Ethylene	17350-23- 9	1 - 10	+	•	-	-	•	-		*	-	•
ETHYLIDENE DIACETATE	542-10-9	1 - 6%		-				-	ų.	•	•	1

Component	CAS Number	Percent %	1990 NIOSH (DLH (Recognized by OSHA)	1994 NIOSH IDLH
ACETIC ACID	64-19-7	20 - 40%	1,000 PPM	80 ppm
ETHYLENE GLYCOL DIACETATE	111-55-7	10 - 20%	-	
ACETOXY ACETIC ACID	13831-30-6	20-40%	-	
Vinyl Acetoxy Acetate	159335-66-3	1-10		-
Cls & trans isomers of Discotoxy Ethylene	17356-23-9	1 - 10		
ETHYLIDENE DIACETATE	542-10-9	1 - 5%		-

Transportation emergency:

800 424 9300 703 527 3887 CHEMTREC, 24 hrs/dsy

Product information:

800 835 5235

Outside USA, collect calls accepted, 24 hrs/day

6 of 14



Product name: MSDS number: Bay City Mixed Vinyl Esters

Material number: Published date: 80572 80572 07/29/2005

Comments:

Celanese has adopted the ACGIH TLVs

Appearance:

Dark brown liquid.

Odor:

Strong, acrid, vinegar-like odor.

Vapor Pressure:

10 mm Hg @ 20 deg C.

Bolling Paint (760 mmHgA):

138 C @ 360 mm Hg

Solubility:

Slightly soluble to insoluble

Density:

1.14

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Stability:

Stable.

Conditions to Avoid:

Avoid heat, flames, sparks, and other sources of ignition.

incompatibility:

Keep away from caustic soda, ilme and strong alkatis, oxidizing agents such as nitric

acid, peroxides, amines, sulfuric acid, perchloric acid or chromium trioxide.

Hazardous Combustion or -Decomposition Products: -- Thermal decomposition products may include oxides of carbon.

Hazardous Polymerization:

Hazardous polymerization will not occur.

Component Toxicological Information

Component ACETIC ACID

Transportation emergency:

800 424 9300 703 527 3887 CHEMTREC, 24 hrs/day

Product information:

800 835 6235

Outside USA, collect calls accepted, 24 hrs/day

7 of 14

FAX NO. :2814701457

LYOW : Baker CORPOLSton



Product name: MSDS number: Material number:

Published date:

Bay City Mixed Vinyl Esters

80572 80572

07/29/2005

**Acute Exposure:** 

Oral LD50: 3.2-5.6 g/kg (rats); slightly toxic to animals.

Inhalation LC50: ...> 16000 ppm (rats, 4 hours); practically nontoxic to animals...

Skin: Corrosive to rabbit skin. Moderately toxic to animals (LD50, rabbits: 1.1 g/kg).

Eyes: Corrosive to rabbit eyes:

Mutagenicity: Mixed results in vitro (negative in the Ames and Chinese hamster ovary assay; positive in human lymphocytes for SCEs and in some DNA damage assays). The positive results are thought to be due to artifacts caused by acidification of the culture media.

Carcinogenicity: No studies conducted according to accepted scientific principles.

Reproductive/Developmental Effects: No reproductive effects were found after oral administration of 1.6 g apple cider vinegar per day (6% acetic acid) to pregnant rabbits, rats or mice.

Repeated Exposure: Acetic acid was administered to rats in the drinking water at concentrations up to 0.5% (up to 390 mg/kg) for 2 to 4 months. Reduced food intake and growth were noted in the 390 mg/kg group but no effects were noted in concentrations of 8 to 195 mg/kg. Administration of 0.5 ml of 3% acetic acid to rate (approx. 60 mg/kg/treatment) in water by stomach tube 3 times/week for 8 months induced cell proliferation of the gullet and forestomach.

Component

ETHYLENE GLYCOL DIACETATE

Transportation emergency:

800 424 9300 703 527 3887 CHEMTREC, 24 hrs/day

800 835 5235

Outside USA, collect calls accepted, 24 hrs/day

Product Information:

8 of 14

FROM : Baker CORPOLSton



Product name: MSDS number: Material number:

Published date:

Bay City Mixed Vinyl Esters

80572 80572

80572 07/29/2005

Acute Exposure:

Oral LD50: 6.85 g/kg (rats), 4.94 g/kg (Guinea pig); considered to be nontoxic to

rodents.

Inhalation LC50: ND

Skin LD50: 9.6 g/kg (rabbits); considered to be nontoxic to rabbits.

Skin-irritation:-ND--

Eye Irritation: mild (rabbit)

Repeated Exposure: rats treated with 1% ethylene glycol diacetate in the drinking water for 11 months exhibited reduced body weight gain and approximately 50% mortality. These adverse effects are believed to be due to deposition of calcium

oxalate crystals in the kidneys.

Mutagenicity: ND

Carcinogenicity: ND

Reproductive/Developmental Effects: ND

Component

ETHYLIDENE DIACETATE

Transportation emergency:

800 424 9300 703 527 3887

O CHEMTREC, 24 hrs/day

Product Information:

800 835 5235

Outside USA, collect calls accepted, 24 hrs/day

9 of 14



Product name: MSDS number; Material number: Published date:

**Bay City Mixed Vinyl Esters** 

80572 80572 07/29/2005

Acute Exposure:

Oral LD80: 3.2 g/kg (rats/male) 2.54 g/kg (rats/female); considered to be nontoxic to rodents.

Inhalation LC50: ND

Skin LD50: > 20 g/kg (guinea pig); considered to be nontoxic to laboratory animals

Skin-Irritation:-slightly-Irritating-(rabbit)-

Eye irritation: slightly irritating (rabbit)

Repeated Exposure: Rats were treated by oral gavage with up to 1000 mg/kg/day for 14 days. No adverse effects were reported.

Mutagenicity: ND

Carcinogenicity: ND

Reproductive/Developmental Effects: ND

Component Ecological Information

Component

**ACETIC ACID** 

Ecotoxicity: The aquatic toxicity and biodegradation of acetic acid are expected to be influenced by its potential to lower pH.

Acetic acid exhibits slight acute toxicity to aquatic species. The 24-, 48- and 96-hour LC50 values for the fathead minnow are 106-122, 92-106 and 79-88 ppm, respectively. The 48-hour LC50 values for rainbow trout and carp are 105 and 49 ppm, respectively. The 96-hour LC50 for mosquitofish is 251 ppm. The 24-hour EC50 for the water flea (daphnid) is 6000 ppm. Toxicity thresholds for green algae (Scenedesmus quadricauda), blue-green algae (Anacystis aeruginosa), and euglenoid (Entosiphon sulcatum) are 4000, 90 and 78 ppm, respectively.

Transportation emergency:

800 424 9300 703 527 3887

CHEMTREC, 24 hrs/day

Product information:

800 835 5235

Outside USA, collect calls accepted, 24 hrs/day

10 of 14

FAX NO. :2814701457

FROM : Baker CORPOHouston



Product name: MSDS number; Material number; Published date; Bay City Mixed Vinyl Esters

80572 80572 07/29/2006

**Environmental Fate:** 

Degradation: Acetic acid will biodegrade readily if released to water (e.g., 5-Day BOD's 83-81%) or soil. The atmospheric photochemical degradation half-life is estimated to be 26.7 days.

**Bioaccumulation:** The log n-octanol water partition coefficient for acetic acid is - 0.17. This suggests that acetic acid has low potential to bioaccumulate.

#### -Component-

### ETHYLENE GLYCOL DIACETATE

**Ecotoxicity:** The LC50 value for the bluegill sunfish is 90 ppm/96 hr in a static fresh water study. The LC50 value for the tidewater silverside is 78 ppm/96 hr in a static synthetic seawater assay.

Environmental Fate: Vapor-phase ethylene glycol diacetate is degraded in the atmosphere by reaction with photochemically produced hydroxyl radical with an estimated half-live of approximately 4 days. The estimated hydrolysis half-life is 15 days at pH 8 and 152 days at pH 7. Ethylene glycol diacetate is essentially non-volatile from water and is expected to have a high mobility in soil.

**Degradation:** Ethylene glycol diacetate is expected to be readily biodegradable in soil and water based upon an O.E.C.D. Screening Test (die-away) using sewage as an inoculum.

Bioaccumulation: An estimated Bioconcentration Factor of 1.2 indicates that ethylene glycol diacetate will not bioconcentrate in aquatic organisms.

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Dispose of spilled material in accordance with state and local regulations for hazardous waste. Recommended methods are incineration or biological treatment at a federally or state-permitted disposal facility. Note that this information applies to the material as manufactured; processing, use, or contamination may make this information inappropriate, inaccurate, or incomplete.

Note that this handling and disposal information may also apply to empty containers, liners and rinsate. State or local regulations or restrictions are complex and may differ from federal regulations. This information is intended as an aid to proper handling and disposal; the final responsibility for handling and disposal is with the owner of the waste. See Section 9 - Physical and Chemical Properties.

EPA Hazardous Waste Code(\$): D001, D002, D007

Transportation emergency:

Product information:

800 424 9300 703 527 3887

CHEMTREC, 24 hrs/day Outside USA, collect calls accepted, 24 hrs/day

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800 835 5235

11 of 14

FROM : Baker CORPOHouston



Product name:

Bay City Mixed VInyl Esters

MSDS number: Material number:

80572 80572

Published date:

07/29/2005

US Department of Transportation:

**UN/NA Number:** 

UN 2924

Shipping name:

Flammable liquids, corrosive, n.o.s. (acetic acid)

Hazard class: Subsidiary_hazerd:

8....

Packing Group:

111

**DOT Reportable Quantity (RQ):** 

5000 lbs./ 2270 kg

Emergency Response Guide:

132

ICAO/IATA:

IATA UN Number:

**UN 2924** 

Proper Shipping Name:

Hazard Classification:

Flammable liquids, corrosives, n.o.s. (acetic acid 3

Subsidiary Hazard:

8 111

Packing group: Labei:

(Flammable Liquid) Corrosive

IMDG:

International Marine UN Number: UN 2924

Proper Shipping Name:

Flammable liquids, corrosive, n.o.s. (acetic acid)

**Hazard Class:** Subsidiary Hazard: 3

Packing Group: Flash point (test method):

115 F - 150 F (46.1 - 65.6 C) (Closed cup)

<u>.∵.Transport Canada</u>

# **U.S. STATE REGULATIONS**

Chemicals associated with the product which are subject to the state right-to-know regulations are listed along with the applicable state(s):

ACETIC ACID 64-19-7

Pennsylvania **New York** 

Listed

New Jersey Illinois

Listed Listed

Massachusetts Rhode Island

Listed Listed Listed

Transportation emergency:

800 424 9300 703 527 3867

CHEMTREC, 24 hrs/day

FAX NO. :2814701457

Outside USA, collect calls accepted, 24 hrs/day

Product information:

800 835 5235

12 of 14

LKCW : Baker CORPOHouston



Product name:

Bay City Mixed Vinyl Esters

MSDS number: Material number: 80572

Published date:

80572 07/29/2005

**ETHYLENE GLYCOL DIACETATE 111-55-7** 

Pennsylvania

Listed

U.S. FEDERAL REGULATIONS

TSCA Inventory:

We certify that all components are either on the TSCA inventory or qualify for an

exemption.

Environmental Regulations:

ACETIC ACID 64-19-7

**CERCLA Hazardous Substance** 

**SARA 311:** 

Acute health:

Yes

Chronic health:

No Yes

Fire: Sudden release of pressure:No

Reactive:

INTERNATIONAL REGULATIONS

International Chemical Inventory

Listed on the chemical inventories of the following countries or qualifies for an exemption:

Prepared by:

******

Product Stewardship Department

Celanese Ltd.

Hazard ratings

This information is intended solely for the use of individuals trained in the NFPA

and/or HMIS systems.

NFPA:

Health: 3 Flammability: 2 Reactivity: 0

HMIS:

Health: 3 Flammability: 2 Reactivity: 0

Transportation emergency:

800 424 9300 703 527 3887 CHEMTREC, 24 hrs/day

FAX NO. :2814701457

инстиней

**Product Information:** 

800 835 5235

Outside USA, collect calls accepted, 24 hrs/day

13 of 14

FROM : Baker CORPOHouston



Product name:

Bay City Mixed Vinyl Esters

MSDS number:

80572

Material number: Published date: 80572 07/29/2005

Revisions: The following sections have been revised since the last issue of this MSDS.

"Facter: Product Information number

For Industrial use only. The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any nazards listed herein are the only ones which exist. Calamse makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. Effects can be aggravated by other materials and/or this material may aggravate or add to the effects of other materials. This material may be released from gas, liquid, or solid materials made directly or indirectly from it. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards. Material safety data sheets are provided on the Internet by Celamese as a service to its customers. Possession of an internet MSDS does not indicate that the possessor of the MSDS was a purchaser or user of the subject product.

Transportation emergency:

800 424 9300 703 527 3887 CHEMTREC, 24 hrs/day

Product information:

800 835 5235

Outside USA, collect calls accepted, 24 hrs/day

14 of 14

Printing date 08/28/2006

Reviewed on 08/25/2006

#### 1 Identification of substance:

Product details:

Product name: Barium hydroxide

Stock number: 14499
Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Emergency Phone: (978) 521-6300

CHEMTREC: (800) 424-9300 Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency information:

During normal hours the Health, Safety and Environmental Department.

After normal hours call Chemtrec at (800) 424-9300.

# 2 Composition/Data on components:

Chemical characterization:

Description: (CAS#)

Barium hydroxide, octahydrate (CAS# 12230-71-6): 100%

Identification number(s): EINECS Number: 241-234-5 EU Number: 056-002-00-7

#### 3 Hazards identification

#### Hazard description:



Xn Harmful

Information pertaining to particular dangers for man and environment R 20/22 Harmful by inhalation and if swallowed. Classification system

Classification system HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)



Health (acute effects) = 2Flammability = 0Reactivity = 1

#### 4 First aid measures

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

(Contd. on page 2)

- USA

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Barium hydroxide

After swallowing Seek immediate medical advice.

(Contd. of page 1)

### 5 Fire fighting measures

#### Suitable extinguishing agents

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Barium oxide

#### Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

# 6 Accidental release measures

#### Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

# Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

## Measures for cleaning/collecting:

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

#### Additional information:

See Section 7 for information on safe handling See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

# 7 Handling and storage

#### Handling

### Information for safe handling:

Handle under dry protective gas.

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

The product is not flammable

#### Storage

Requirements to be met by storerooms and receptacles:

No special requirements.

#### Information about storage in one common storage facility:

Store away from air.

Do not store together with acids.

# Further information about storage conditions:

Store under dry inert gas.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

This product is air sensitive.

- IISA

(Contd. on page 3)

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Barium hydroxide

(Contd. of page 2)

# 8 Exposure controls and personal protection

#### Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

```
Barium, and soluble compounds, as Ba
                     mq/m3
ACGIH TLV
                      0.5; Not classified as a human carcinogen
Austria MAK
                      0.5
Belgium TWA
                      0.5
Denmark TWA
                      0.5
Finland TWA
                     0.5
Germany MAK
                      0.5 (total dust)
                      0.5-STEL
Hungary
Ireland TWA
                      0.5
Korea TLV
                      0.5
Netherlands MAC-TGG
                     0.5
Norway TWA
                      0.5
Poland TWA
                      0.5; 1.5-STEL
Sweden TWA
                      0.5
Switzerland MAK-W
                      0.5
United Kingdom LTEL
                      0.5
USA PEL
                      0.5
Additional information: No data
```

#### Personal protective equipment

# General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

#### Breathing equipment:

Use suitable respirator when high concentrations are present.

## Protection of hands:

Check protective gloves prior to each use for their proper condition. Impervious gloves

# Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Eye protection: Safety glasses

Body protection: Protective work clothing.

# 9 Physical and chemical properties:

General Information		
Form: Color: Odor:	Crystalline White Odorless	
Change in condition  Melting point/Melting range: Boiling point/Boiling range: Sublimation temperature / start:	78°C (172°F) Not determined Not determined	

(Contd. on page 4)

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Barium hydroxide

	(Contd. of page 3)
Flash point:	Not applicable
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not determined
Density at 20°C (68°F):	2.18 g/cm³
Solubility in / Miscibility with	
Water:	Soluble

# 10 Stability and reactivity

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided:

Air Acids

Dangerous reactions No dangerous reactions known Dangerous products of decomposition: Barium oxide

# 11 Toxicological information

Acute toxicity:

Primary irritant effect:

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: No sensitizing effects known.

Subacute to chronic toxicity:

Barium compounds may cause severe gastroenteritis, including abdominal pain, vomiting and diarrhea, tremors, faintness, paralysis of the arms and legs, and slow or irregular heartbeat. Severe cases may produce collapse and death due to respiratory failure. Soluble barium compounds are more likely to cause these effects than insoluble compounds. Inhalation of fumes may cause sore throat, coughing, labored breathing, and irritation of the respiratory tract as well as the above symptoms. Subacute to chronic toxicity:

Corrosive materials are acutely destructive to the respiratory tract, eyes, skin and digestive tract. Eye contact may result in permanent damage and complete vision loss. Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis. May cause coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Ingestion may cause damage to the mouth, throat and esophagus. May cause skin burns or irritation depending on the severity of the exposure.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

(Contd. on page 5)

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Barium hydroxide

(Contd. of page 4)

EPA-NL: Not likely to be carcinogenic to humans.

EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.

ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans

and/or animals.

# 12 Ecological information:

#### General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

# 13 Disposal considerations

#### Product:

#### Recommendation

Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations. Recommended cleansing agent: Water, if necessary with cleansing agents.

## 14 Transport information

## DOT regulations:



Hazard class:

8

Identification number:

UN3262

Packing group:

III

Proper shipping name (technical

name):

CORROSIVE SOLID, BASIC, INORGANIC,

N.O.S. (Barium hydroxide)

Label

8

#### Land transport ADR/RID (cross-border)



ADR/RID class:

8 (C6) Corrosive substances

Danger code (Kemler):

80

*UN-Number:* 

3262

Packaging group:

III

(Contd. on page 6)

- USA

3262

8

8

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Barium hydroxide

(Contd. of page 5)

Description of goods:

3262 CORROSIVE SOLID, BASIC, INORGANIC,

N.O.S. (Barium hydroxide)

Maritime transport IMDG:



IMDG Class:

8 UN Number: Label Packaging group:

Proper shipping name:

IIICORROSIVE SOLID, BASIC, INORGANIC,

N.O.S. (Barium hydroxide)

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class:

UN/ID Number: Label

Packaging group: Proper shipping name: 3262 8 III

CORROSIVE SOLID, BASIC, INORGANIC,

N.O.S. (Barium hydroxide)

### 15 Regulations

# Product related hazard informations:

## Hazard symbols:

Xn Harmful

# Risk phrases:

20/22 Harmful by inhalation and if swallowed.

# Safety phrases:

28 After contact with skin, wash immediately with plenty of water

# National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

# Information about limitation of use:

For use only by technically qualified individuals.

This product contains barium and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

(Contd. on page 7)

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Barium hydroxide

(Contd. of page 6)

# 16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department. Contact: Darrell R. Sanders

JSA ·

# **Material Safety Data Sheet**

(complies with OSHA's Hazard Communication Standard) (29 CFR 1910.1200)

**Date Prepared:** 

8/6/02

# Section I

Manufacturer's Name:

**Hormel Foods Corporation** 

1 Hormel Place

Austin, MN 55912

**Emergency Telephone Number:** 

507-437-5264

**Telephone Number for Information:** 

507-437-5264

# Section II

# Hazardous Ingredients/Identity Information:

Porcine Choice White Grease - Animal Fats

NOTE: According to OSHA regulation 29 CFR 1910.1200, appendixes A and B, animal fats are not considered hazardous.

# **Section III**

# Physical/Chemical Characteristics:

**Boiling Point** 

N/A

Specific Gravity (H₂0=1)

0.88

Vapor Pressure

N/A

Melting Point

105°F

Vapor Density

N/A

**Evaporation Rate** 

Solubility in Water

Not Soluble

N/A

Appearance and Odor

amber to brown liquid when heated, white to brown when

solid, fatty odor.

# **Section IV**

# Fire and Explosion Hazard Data:

Flash Point:

Flammable Limits:

450°F

530°F

LEL:

UEL:

N/A

N/A

Extinguishing Media:

Dry chemical, carbon dioxide, water spray, or regular foam.

Special Fire Fighting Procedures:

For larger fires, use water spray, fog or regular foam.

(See 1990 Emergency Response Guidebook, DOT P5800.5)

Unusual Fire and Explosion Hazards:

No acute hazard.

Page 1

# Section V

# Reactivity Data:

Stability:

Stable

Incompatibility (Materials to Avoid):

Oxidizers (strong)

Hazardous Decomposition or Byproducts:

Thermal decomposition products may include toxic oxides of carbon.

Hazardous Polymerization:

Not reported to occur.

# Section VI

# Health Hazard Data:

Route(s) of Entry:

Health Hazards:

Inhalation

N/A N/A Skin

N/A

Ingestion

According to OSHA regulation 29 CFR 1910.1200 Appendixes A and B, feed

Fats are not considered hazardous.

Carcinogenicity?

N/A

NTP?

N/A

IARC Monographs?

N/A

OSHA regulated?

N/A

Signs and Symptoms of Exposure

N/A

Medical Conditions Generally Aggravated by Exposure

N/A

Exposure and First Aid Procedures

Hot liquid fat may cause burns

# **Section VII**

# Precautions for Safe Handling and Use:

Steps to be taken in case material is released or spilled:

Take steps to contain material, let harden, then remove.

May use suitable absorbent.

Waste Disposal Method:

Rendering company or landfill. May be subject to Federal, State or Local Laws.

Precautions to be taken in handling and storage:

N/A

Other Precautions:

N/A

Page 2

# Section VIII

# **Control Measures:**

N/A Respiratory Protection Ventilation: N/A Local Exhaust N/A Special N/A Mechanical N/A Other **Protective Gloves** N/A **Eye Protection** N/A Other Protective Clothing Or Equipment N/A Work/Hygienic Practices N/A

# Section IX

# **Special Precautions and Comments:**

Precautions to be taken in handling and storage:

Other Precautions:

Effective Date:

Phone Number:

IMPORTANT:

None

August 8, 2001

507-437-5264

The information and data herein are believed to be accurate and have been compiled from sources believed to be reliable. It is offered for your consideration, investigation and verification. Buyer assumes all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Hormel Foods Corporation makes no warranty of any kind, express or implied, concerning the completeness of the information and data herein. Hormel Foods Corporation will not be liable for claims relating to any party's use of, or reliance on, information and data contained herein regardless of whether it is claimed that the information and data are inaccurate, incomplete or otherwise misleading. This information relates to the material designated and may not be valid for such material used in combination with any other materials nor in any process.



Safety data sheet

1,2-Pentanediol

Revision date : 2006/05/09

Version: 1.0

Page: 1/5

(30036634/MDS_GEN_US/EN)

# 1. Substance/preparation and company identification

Company
BASF CORPORATION
100 Campus Drive
Florham Park, NJ 07932

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300 BASF HOTLINE: 1-800-832-HELP

# 2. Composition/information on ingredients

**CAS Number** 

5343-92-0 41051-72-3 Content (W/W)

80.0 - 100.0 % 1.0 - 5.0 % Chemical name

pentane-1,2-diol

1,2-Butanediol, 2-methyl-

# 3. Hazard identification

# **Emergency overview**

DANGER: CAUSES EYE IRRITATION. RISK OF SERIOUS DAMAGE TO EYES.

INGESTION MAY CAUSE GASTRIC DISTURBANCES.

Avoid contact with the skin, eyes and clothing.

Avoid inhalation of mists/vapours.

Use with local exhaust ventilation.

Wear appropriate respiratory protection.

Wear NIOSH-certified chemical goggles.

Wear full face shield if splashing hazard exists.

Wear chemical resistant protective gloves.

Wear protective clothing.

Eye wash fountains and safety showers must be easily accessible.

#### Potential health effects

#### Primary routes of exposure

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases.

#### 4. First-aid measures

# General advice:

Remove contaminated clothing.

# Safety data sheet

1,2-Pentanediol Revision date: 2006/05/09

Page: 2/5

(30036634/MDS_GEN_US/EN)

Version: 1.0

If inhaled:

If difficulties occur after vapour/aerosol has been inhaled, remove to fresh air and seek medical attention.

If on skin:

Wash thoroughly with soap and water.

If irritation develops, seek medical attention.

If in eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open. Seek medical attention.

If swallowed:

Rinse mouth immediately and then drink plenty of water, seek medical attention.

# 5. Fire-fighting measures

Flash point:

110 °C

(DIN 51758) (DIN 51794)

Autoignition:

380 °C

Lower explosion limit: Upper explosion limit:

1.7 %(V) 9.3 %(V)

Suitable extinguishing media:

water, alcohol-resistant foam, dry extinguishing media, carbon dioxide

Protective equipment for fire-fighting:

Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:

Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems.

NFPA Hazard codes:

Health: 3

Fire: 1

Reactivity: 0

Special:

# 6. Accidental release measures

Personal precautions:

Handle in accordance with good industrial hygiene and safety practice.

**Environmental precautions:** 

Discharge into the environment must be avoided.

Cleanup:

For large amounts: Pump off product.

For residues: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder,

kieselguhr). Dispose of absorbed material in accordance with regulations.

# 7. Handling and storage

# **Handling**

General advice:

Ensure thorough ventilation of stores and work areas.

Protection against fire and explosion:

Take precautionary measures against static discharges. Sources of ignition should be kept well clear.

# Safety data sheet 1,2-Pentanediol

Revision date: 2006/05/09 Version: 1.0

Page: 3/5

(30036634/MDS_GEN_US/EN)

**Storage** 

Storage stability:

Storage duration: 24 Months

# 8. Exposure controls and personal protection

Advice on system design:

Provide local exhaust ventilation to control vapours/mists.

#### Personal protective equipment

Respiratory protection:

Wear respiratory protection if ventilation is inadequate.

Hand protection:

Wear chemical resistant protective gloves., Consult with glove manufacturer for testing data.

Eye protection:

Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

**Body protection:** 

Body protection must be chosen based on level of activity and exposure.

General safety and hygiene measures:

Avoid contact with the skin, eyes and clothing. Wearing of closed work clothing is required additionally to the stated personal protection equipment.

# 9. Physical and chemical properties

Form:

liquid

Odour:

odourless

Colour:

colourless to yellowish

pH value:

7-0

Melting point:

< -40 °C

Boiling point:

208 - 210 °C

Vapour pressure:

< 1 mbar

( 20 °C)

Density: Solubility in water: 0.97 g/cm3

( 20 °C) ( 20 °C) miscible

(500 g/l, 20 °C)

# 10. Stability and reactivity

Hazardous reactions:

No hazardous reactions if stored and handled as prescribed/indicated.

# 11. Toxicological information

# **Acute toxicity**

Oral:

LD50/rat: > 12,000 mg/kg

Skin irritation:

rabbit: non-irritant (OECD Guideline 404)

# Safety data sheet 1,2-Pentanediol

Revision date : 2006/05/09

Page: 4/5

Version: 1.0

(30036634/MDS_GEN_US/EN)

Eye irritation:

rabbit: Irritant. (OECD Guideline 405)

Risk of serious damage to eyes.

#### **Chronic toxicity**

#### Other information:

No experimental evidence available for genotoxicity in vitro (Ames test negative).

# 12. Ecological information

# **Environmental fate and transport**

Biodegradation:

Test method:

OECD 302B; ISO 9888; 88/302/EEC,part C

Method of analysis:

DOC reduction > 90 %

Degree of elimination:

Evaluation:

Easily eliminated from water.

#### Chemical oxygen demand (COD):

2,070 mg/g

#### Biochemical oxygen demand (BOD):

: 1,070 mg/g

# Adsorbable organically-bound halogen (AOX):

This product contains no organically-bound halogen.

Acute and prolonged toxicity to fish:

OECD 203; ISO 7346; 84/449/EEC, C.1 static

zebra fish/LC50 (96 h): > 1,000 mg/l

## Acute toxicity to aquatic invertebrates:

Directive 79/831/EEC Daphnia magna/EC50 (48 h): > 500 mg/l

#### Toxicity to aquatic plants:

DIN 38412 Part 9 EC50 (72 h): > 500 mg/l

#### Toxicity to microorganisms:

DIN 38412 Part 8 bacterium/EC50 (17 h): > 10,000 mg/l

# 13. Disposal considerations

#### Waste disposal of substance:

Do not discharge into waterways or sewer systems without proper authorization.

Dispose of in accordance with national, state and local regulations.

#### Container disposal:

Dispose of container and any rinsate in an environmentally safe manner. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

## 14. Transport information

# Safety data sheet 1,2-Pentanediol

Revision date: 2006/05/09

Version: 1.0

Page: 5/5 (30036634/MDS GEN US/EN)

Land transport

USDOT

Not classified as a dangerous good under transport regulations

Sea transport

**IMDG** 

Not classified as a dangerous good under transport regulations

Air transport IATA/ICAO

Not classified as a dangerous good under transport regulations

# 15. Regulatory information

**Federal Regulations** 

Registration status:

TSCA, US

released / listed

OSHA hazard category:

Skin and/or eye irritant

SARA hazard categories (EPCRA 311/312): Acute

### 16. Other information

**HMIS III rating** 

Health: 3

Flammability: 1

Physical hazard: 0

HMIS uses a numbering scale ranging from 0 to 4 to indicate the degree of hazard. A value of zero means that the substance possesses essentially no hazard; a rating of four indicates high hazard.

Local contact information prod_reg@basf.com

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# **Material Safety Data Sheet**

Catalog Number: 207085 Revision date: 25-Apr-2006

# 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY INFORMATION

Catalog Number: 207085

**Product name: AMYL ACETATE** 

Supplier:

MP Biomedicals, LLC 29525 Fountain Parkway Solon, OH 44139

tel: 440-337-1200

Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

#### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Components
AMYL ACETATE

**CAS Number** 628-63-7

Weight % 90 - 100%

ACGIH Exposure Limits: 50 ppm TWA (Pentyl acetate, all isomers) OSHA Exposure Limits: 100 ppm TWA; 525 mg/m³ TWA

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Flammable, Harmful to flora, fauna, soil organisms and aquatic organisms.

Category of Danger:

Flammable, Dangerous for the environment

Principle routes of exposure: Skin

Inhalation: May cause irritation of respiratory tract

Ingestion: May be harmful if swallowed.

Skin Contact: May cause allergic skin reaction

Eve contact: Avoid contact with eyes

Statements of hazard Flammable

**Statement of Spill or Leak - ANSI Label** Eliminate all ignition sources. Absorb and/or contain spill with inert materials (e.g., Sand, vermiculite). Then place in appropriate container. For large spills, use water spray to disperse vapors, flush spill area. Prevent runoff from entering waterways or sewers.

**Precautions - ANSI Label** Do not breathe vapors or spray mist Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling.

# 4. FIRST AID MEASURES

**General advice:** In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Inhalation: Move to fresh air. Call a physician immediately.

Skin Contact: Rinse immediately with plenty of water and seek medical advice

Ingestion: Do not induce vomiting without medical advice.

Eye contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Catalog Number: 207085

Product name: AMYL ACETATE

Page 1 of 6

Protection of first-aiders: No information available

Medical conditions aggravated by exposure: None known

# 5. FIRE FIGHTING MEASURES

Suitable extinguishing media:

Carbon dioxide (CO2), Dry powder, Foam, Water may be ineffective., Use dry chemical, CO2, water spray or 'alcohol'

foam.

Burning produces irritant fumes.

Unusual hazards:

None known

Special protective equipment for firefighters:

Wear self contained breathing apparatus for fire fighting if necessary. In the event of fire and/or explosion do not

Specific methods:

Specific hazards:

breathe fumes.

Flash point: Autoignition temperature: Water mist may be used to cool closed containers. Not determined

360-380 °C (680-716 °F)

NFPA rating:

NFPA Health:

NFPA Flammability:

2 0

NFPA Reactivity:

# 6. ACCIDENTAL RELEASE MEASURES

Personal precautions: **Environmental precautions:**  Use personal protective equipment. Prevent product from entering drains.

Methods for cleaning up:

Ground and bond containers when transferring material

# 7. HANDLING AND STORAGE

Storage:

ROOM TEMPERATURE

Handling:

Use only in area provided with appropriate exhaust

ventilation.

Safe handling advice:

Wear personal protective equipment. Remove and wash

contaminated clothing before reuse.

Technical measures/storage conditions:

Keep container tightly closed in a dry and well-ventilated

place. Keep away from open flames, hot surfaces and

sources of ignition

Incompatible products: Oxidising and spontaneously flammable products

# 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation, especially in confined areas.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

Hand protection: Pvc or other plastic material gloves

Skin and body protection: Impervious clothing Long sleeved clothing

Eye protection: If splashes are likely to occur, wear: Safety glasses with side-shields Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.



Product name: AMYL ACETATE Page 2 of 6 Catalog Number: 207085

# 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor

Pure n-amyl acetate is a clear, colorless liquid. Commercial

Physical state: Formula:

Molecular weight:

Melting point/range: Boiling point/range:

Density:

Vapor pressure: **Evaporation rate:** Vapor density: Solubility (in water):

Flash point:

Autoignition temperature:

grades may be yellow. All grades have a banana-like odor.

Liquid C7-H14-O2 130.18

-70.8 °C (-95.4 °F) 149.25 °C (300.7 °F) 0.876 at 20 °C (water = 1) 5 mm Hg (0.67 kPa) at 25 °C

0.42 (n-butyl acetate = 1) 4.5 (air = 1)

Slightly soluble Not determined

360-380 °C (680-716 °F)

# 10. STABILITY AND REACTIVITY

Stability:

Polymerization:

Hazardous decomposition products:

Stable under recommended storage conditions.

None under normal processing.

Thermal decomposition can lead to release of irritating

gases and vapours such as carbon oxides.

Materials to avoid:

Nitrates; strong oxidizers, alkalies, and acids

Conditions to avoid:

Exposure to air or moisture over prolonged periods.

# 11. TOXICOLOGICAL INFORMATION

**Product Information** 

**Acute toxicity** 

Components AMYL ACETATE

**RTECS Number:** 

AJ1925000

Selected LD50s and LC50s

Not Determined

Chronic toxicity:

Chronic exposure may cause nausea and vomiting, higher exposure causes

Local effects:

unconsciousness. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and

vomiting.

Specific effects:

May include moderate to severe erythema (redness) and moderate edema (raised

skin), nausea, vomiting, headache.

Primary irritation: Carcinogenic effects:

Mutagenic effects: Reproductive toxicity: No data is available on the product itself. No data is available on the product itself. No data is available on the product itself. No data is available on the product itself.

Components AMYL ACETATE

**NIOSH - Health Effects** 

**NIOSH - Target Organs** 

eyes, skin, respiratory system, CNS

Acute irritation of the eyes and upper

respiratory tract, possible CNS depression,

chronic skin irritation

# 12. ECOLOGICAL INFORMATION

Mobility:

Bioaccumulation: **Ecotoxicity effects:** Aquatic toxicity:

No data available No data available No data available

May cause long-term adverse effects in the aquatic

environment.

Catalog Number: 207085

Product name: AMYL ACETATE

Page 3 of 6

MP Biomedicals, LLC

www.mpbio.com

Components

AMYL ACETATE

U.S. DOT - Appendix B -

**Marine Pollutan** 

Not Listed

U.S. DOT - Appendix B -**Severe Marine Pollutants** 

Not Listed

United Kingdom - The Red

List: Not Listed

Components

AMYL ACETATE

Germany VCI (WGK)

World Health Organization (WHO) - Drinking Water

Not Listed

**Ecotoxicity - Fish Species** 

Data

LC50 (96 hr) bluegill sunfish: 650 mg/L. Cond: Static, 23 °C.; LC50 (24-96 hr) mosquito

fish: 65 mg/L.

Components

**Ecotoxicity - Freshwater** 

Algae Data

Ecotoxicity - Microtox Data Ecotoxicity - Water Flea

Data

AMYL ACETATE

Not Listed

1

Not Listed

Not Listed

Components

**EPA - ATSDR Priority List** 

**EPA - HPV Challenge** 

**Program Chemical List** 

California - Priority Toxic

**Pollutants** Not Listed

AMYL ACETATE

Not Listed

indicator 2; Not sponsored

Components AMYL ACETATE California - Priority Toxic Pollutants

Not Listed

California - Priority Toxic Pollutants

Not Listed

# 13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished

with this material may be hazardous.

Contaminated packaging: Methods for cleaning up:

Do not re-use empty containers

Ground and bond containers when transferring material

# 14. TRANSPORT INFORMATION

UN/Id No:

1104

DOT:

Proper shipping name:

IATA Hazard Label(s):

**Hazard Class** 

Packing group:

Amyl acetates (flammable liquid)

Flammable Liquid

Flammable liquid

111

**Emergency Response Guide Number (ERG):** 

129

Components

U.S. DOT - Appendix A Table 1 - Reportable Quantities

AMYL ACETATE

RQ = 5000 pounds (2270 kg)

TDG (Canada):

Catalog Number: 207085

Product name: AMYL ACETATE

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MP Biomedicals, LLC

www.mpbio.com

WHMIS hazard class:

B2 flammable liquids



IMDG/IMO

Proper shipping name:

Amyl acetates (flammable liquid)

**IMDG - Hazard Classifications IMDG - Regulated Substances**  IMDG class or division = 3

UN1104

Components

U.S. DOT - Appendix B - Marine Pollutan U.S. DOT - Appendix B - Severe Marine

**Pollutants** Not Listed

AMYL ACETATE

Not Listed

IMO-labels:

15. REGULATORY INFORMATION

International Inventories

Components

**AMYL ACETATE** 

Inventory - United States TSCA - Sect. 8(b)

Canada DSL Inventory List -

Australia (AICS):

Inventory - China:

**EU EINECS List -**

Inventory - Japan:

Korean KECL:

**Philippines PICCS:** 

Present

Present

Present Present

211-047-3; C7H14O2

2-733; 2-735

KE-01766

Present

**U.S. regulations:** 

Components

Not Listed

California Proposition 65 Massachusetts Right to **Know List:** 

[present]

New Jersey Right to

Pennsylvania Right to Know

List:

Know List:

sn 1321

environmental hazard

Components

Florida substance List:

Rhode Island Right to

Illinois - Toxic Air

Connecticut - Hazardous Air

AMYL ACETATE

**AMYL ACETATE** 

[present]

Know List: Toxic

Contaminants Not Listed

**Pollutants** 10,500 ug/m3 HLV; 2 ppmv HLV

SARA 313 Emission

CERCLA/SARA - Section NTP:

IARC:

Components

AMYL ACETATE

reporting/Toxic Release 302 Extremely Haz

of Chemicals Not Listed

Not Listed

None

None

**SARA 313 Notification:** 

The above is your notification as to the SARA 313 listing for this product(s) pursuant to Section 313 of Title III of the Superfund Ammendments and Reauthorization Act of

1986 and 40 CFR Part 372.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2499 (in

Washington, DC or Alaska).

Catalog Number: 207085

Product name: AMYL ACETATE

Page 5 of 6

www.mpbio.com

**State Notification:** 

The above information is your notice as to the Right-to-Know listings of the stated product(s). Individual states will list chemicals for a variety of reasons including, but not limited to, the compounds toxicity; carcinogenic, tumorigenic and/or reproductive hazards; and the compounds environmental impact if accidentally released.

# **16. OTHER INFORMATION**

Prepared by: Health & Safety

Disclaimer: The information and recommendations contained herein are based upon tests believed to be reliable. However, MP Biomedicals does not guarantee the accuracy or completeness NOR SHALL ANY OF THIS INFORMATION CONSTITUTE A WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE. Adjustment to conform to actual conditions of usage maybe required. MP Biomedicals assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

End of Safety Data Sheet

Catalog Number: 207085 Product name: AMYL ACETATE Page 6 of 6



# **Material Safety Data Sheet**

The Dow Chemical Company

Product Name: AMINOETHYLETHANOLAMINE.

Issue Date: 08/02/2006 Print Date: 05 Aug 2006

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

# 1. Product and Company Identification

#### **Product Name**

AMINOETHYLETHANOLAMINE.

#### **COMPANY IDENTIFICATION**

The Dow Chemical Company 2030 Willard H. Dow Center Midland, MI 48674 USA

**Customer Information Number:** 

800-258-2436

#### **EMERGENCY TELEPHONE NUMBER**

24-Hour Emergency Contact: Local Emergency Contact:

989-636-4400

989-636-4400

# 2. Hazards Identification

#### **Emergency Overview**

Color: Colorless Physical State: Liquid Odor: Slightly ammoniacal Hazards of product:

DANGER! Causes severe eye burns. Causes severe skin burns. Causes burns of the mouth and throat. May cause allergic skin reaction. Aspiration hazard. Can enter lungs and cause damage. Keep upwind of spill.

## **OSHA Hazard Communication Standard**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

## **Potential Health Effects**

**Eye Contact:** May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

**Skin Contact:** Brief contact may cause skin burns. Symptoms may include pain, severe local redness and tissue damage. May cause more severe response on covered skin (under clothing, gloves). Classified as corrosive to the skin according to DOT guidelines.

Page 1 of 8

**Skin Absorption:** Prolonged skin contact is unlikely to result in absorption of harmful amounts. **Skin Sensitization:** Skin contact may cause an allergic skin reaction. Individuals who have had an allergic skin reaction to similar materials may have an allergic skin reaction to this product. The similar material(s) is/are: Triethylenetetramine (TETA). Has caused allergic skin reactions when tested in mice. Has caused allergic skin reactions when tested in guinea pigs.

**Inhalation:** At room temperature, exposure to vapor is minimal due to low volatility; vapor from heated material may cause respiratory irritation.

**Ingestion:** Low toxicity if swallowed. Swallowing may result in gastrointestinal irritation or ulceration. Swallowing may result in burns of the mouth and throat. Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

**Effects of Repeated Exposure:** In animals, effects have been reported on the following organs: Gastrointestinal tract. Kidney.

Birth Defects/Developmental Effects: Has caused birth defects in laboratory animals.

Reproductive Effects: Has been toxic to the fetus in laboratory animal tests. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

# 3. Composition Information

Component	CAS#	Amount
Aminoethylethanolamine	111-41-1	> 99.5 %
Triethylenetetramine mixture	112-24-3	> 0.1 %

# 4. First-aid measures

**Eye Contact:** Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

**Skin Contact:** Immediately wash thoroughly any size exposure with non-abrasive soap and large quantities of water for 30 minutes while removing contaminated clothing and shoes. Destroy contaminated leather items such as shoes, belts, and watchbands. Wash contaminated clothing before reuse.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

**Ingestion:** Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth to an unconscious person.

Notes to Physician: Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

# 5. Fire Fighting Measures

**Extinguishing Media:** Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Do not use direct water stream. May spread fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if

Page 2 of 8

this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.

# 6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Milsorb®. Sand. Do NOT use absorbent materials such as: Cellulose. Sawdust. Collect in suitable and properly labeled containers. Large spills: Dike area to contain spill. Dilute with large quantities of water. Pump into suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

**Personal Precautions:** Evacuate area. Only trained and properly protected personnel must be involved in clean-up operations. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to Section 7, Handling, for additional precautionary measures.

**Environmental Precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

# 7. Handling and Storage

#### Handling

**General Handling:** Do not get in eyes, on skin, on clothing. Do not swallow. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION. Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines could be formed.

**Other Precautions:** Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

#### **Storage**

Store in a dry place. Do not store in: Zinc. Copper. Galvanized containers. Copper alloys. Additional storage and handling information on this product may be obtained by calling your Dow sales or customer service contact.

# 8. Exposure Controls / Personal Protection

Exposure Limits			
Component	List	Type	Value
Aminoethylethanolamine	Dow IHG	TWA	0.5 mg/m3 SKIN, D-SEN
Triethylenetetramine mixture	WEEL	TWA	6 mg/m3 1 ppm SKIN

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A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin

Issue Date: 08/02/2006

It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

A D-SEN notation following the exposure guideline refers to the potential to produce dermal sensitization, as confirmed by human or animal data.

#### **Personal Protection**

Eye/Face Protection: Use chemical goggles. Eye wash fountain should be located in immediate work area.

**Skin Protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyethylene. Chlorinated polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. Avoid gloves made of: Polyvinyl alcohol ("PVA"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. For most conditions, no respiratory protection should be needed; however, if handling at elevated temperatures without sufficient ventilation, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge.

**Ingestion:** Avoid ingestion of even very small amounts; do not consume or store food or tobacco in the work area; wash hands and face before smoking or eating.

#### **Engineering Controls**

**Ventilation:** Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

# 9. Physical and Chemical Properties

**Physical State** 

Color

Odor

Flash Point - Closed Cup

Flammable Limits In Air

Autoignition Temperature

Vapor Pressure

Boiling Point (760 mmHg) Vapor Density (air = 1)

Specific Gravity (H2O = 1)

Liquid Density

Freezing Point Melting Point

Solubility in Water (by

weight) pH

Molecular Weight

Octanol/Water Partition Coefficient

Liquid Colorless

Slightly ammoniacal

127 °C (261 °F) *ASTM D*93

Lower: No test data available

Upper: No test data available

No test data available

< 0.01 mmHg @ 20 °C Literature 242.8 °C (469.0 °F) Literature .

3.6 Literature

1.030 20 °C/20 °C Literature

1.030 g/ml @ 15.56 °C Literature 1.027 g/ml @ 20 °C Literature 1.035

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g/ml @ -45 °C Literature @ freezing pt.

-45 °C (-49 °F) Literature not applicable to liquids

100 % Literature

No test data available 104.15 g/mol

-1.46 Measured

______

**Product Name: AMINOETHYLETHANOLAMINE** 

0.01

**Evaporation Rate (Butyl** 

Acetate = 1)

Kinematic Viscosity

98 mm2/s @ 25 °C Literature

Issue Date: 08/02/2006

#### 10. Stability and Reactivity

#### Stability/Instability

Stable under recommended storage conditions. See Storage, Section 7. Hygroscopic. Conditions to Avoid: Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Avoid moisture.

Incompatible Materials: Avoid contact with: Nitrites, Strong acids, Strong oxidizers, Product may potentially react with various halogenated organic solvents, resulting in temperature and/or pressure increases Corrosive when wet. Heating above 60°C in the presence of aluminum can result in corrosion and generation of flammable hydrogen gas. Avoid unintended contact with: Halogenated hydrocarbons.

# **Hazardous Polymerization**

Will not occur.

#### **Thermal Decomposition**

Decomposition products depend upon temperature, air supply and the presence of other materials.

#### 11. **Toxicological Information**

#### **Acute Toxicity**

Ingestion

LD50, Rat 2,000 - 4,000 mg/kg

#### Skin Absorption

LD50, Rabbit 3,266 mg/kg

LD50, Rat 2,250 mg/kg

#### Sensitization

Skin

Skin contact may cause an allergic skin reaction. Individuals who have had an allergic skin reaction to similar materials may have an allergic skin reaction to this product. The similar material(s) is/are: Triethylenetetramine (TETA). Has caused allergic skin reactions when tested in mice. Has caused allergic skin reactions when tested in guinea pigs.

#### Repeated Dose Toxicity

In animals, effects have been reported on the following organs: Gastrointestinal tract. Kidney. Repeated skin application to laboratory animals did not produce systemic toxicity.

## **Developmental Toxicity**

Has caused birth defects in laboratory animals. However, the route(s) of exposure were not relevant for industrial hazard evaluation.

# Reproductive Toxicity

Has been toxic to the fetus in laboratory animal tests. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

#### Genetic Toxicology

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Page 5 of 8

# 12. Ecological Information

#### **CHEMICAL FATE**

**Movement & Partitioning** 

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Henry's Law Constant (H): 8.8E-10 atm*m3/mole; 25 °C Estimated Partition coefficient, n-octanol/water (log Pow): -1.46 Measured

Partition coefficient, soil organic carbon/water (Koc): 3.5 Estimated

Bioconcentration Factor (BCF): < 3.7; common carp (Cyprinus carpio); Measured

#### Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is inherently biodegradable (reaches > 20% biodegradation in OECD test(s) for inherent biodegradability).

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospher	ic Half-life	Method
1.20E-10 cm3/s	1.1 h		Estimated
OECD Biodegradation Tests: Biodegradation	Exposu	e Time	Method
> 97 %	28	d	OECD 301F Test
30 - 50 %	37 d		OECD 302B Test
Biological oxygen demand (B	BOD):		
BOD 5	BOD 10	BOD 20	BOD 28
2 %	64 %	90 %	

Theoretical Oxygen Demand: 2.77 mg/mg

#### **ECOTOXICITY**

Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

# **Fish Acute & Prolonged Toxicity**

LC50, fathead minnow (Pimephales promelas), 96 h: 520 - 728 mg/l

**Aquatic Invertebrate Acute Toxicity** 

EC50, water flea Daphnia magna, 48 h, immobilization: 65 mg/l

**Aquatic Plant Toxicity** 

EC50, alga Scenedesmus sp., biomass growth inhibition, 72 h: 210 mg/l

**Toxicity to Micro-organisms** 

EC50; bacteria, Growth inhibition, 16 h: > 5,000 mg/l

# 13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. DOW HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Incinerator or other thermal destruction device. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Group at 1-800-258-2436 or 1-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details.

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# 14. Transport Information

**DOT Non-Bulk** 

Proper Shipping Name: POLYAMINES, LIQUID, CORROSIVE, NOS

Technical Name: AMINOETHYLETHANOLAMINE

Hazard Class: 8 ID Number: UN2735 Packing Group: PG II

**DOT Bulk** 

Proper Shipping Name: POLYAMINES, LIQUID, CORROSIVE, NOS

Technical Name: AMINOETHYLETHANOLAMINE

Hazard Class: 8 ID Number: UN2735 Packing Group: PG II

IMDG

Proper Shipping Name: POLYAMINES, LIQUID, CORROSIVE, NOS

Technical Name: AMINOETHYLETHANOLAMINE

Hazard Class: 8 ID Number: UN2735 Packing Group: PG II

EMS Number: F-A,S-B

ICAO/IATA

Proper Shipping Name: POLYAMINES, LIQUID, CORROSIVE, NOS

Technical Name: AMINOETHYLETHANOLAMINE

Hazard Class: 8 ID Number: UN2735 Packing Group: PG II

Cargo Packing Instruction: 812

Passenger Packing Instruction: 808

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

# 15. Regulatory Information

#### **OSHA Hazard Communication Standard**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard Yes
Delayed (Chronic) Health Hazard Yes
Fire Hazard No
Reactive Hazard No
Sudden Release of Pressure Hazard No

# Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

# Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS#	Amount	
Aminoethylethanolamine	111-41-1	> 99.5 %	•

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# Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Issue Date: 08/02/2006

#### California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

#### **US. Toxic Substances Control Act**

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

#### **CEPA - Domestic Substances List (DSL)**

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

## 16. Other Information

#### **Product Literature**

Additional information on this product may be obtained by calling your Dow Chemical Company sales or customer service contact.

#### **Recommended Uses and Restrictions**

Fabric softeners. Surfactants. Others.

#### Revision

Identification Number: 467 / 1001 / Issue Date 08/02/2006 / Version: 2.1 Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

#### Legend

N/A	Not available	
W/W	Weight/Weight	
OEL	Occupational Exposure Limit	
STEL	Short Term Exposure Limit	
TWA	Time Weighted Average	
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.	
DOW IHG	Dow Industrial Hygiene Guideline	
WEEL	Workplace Environmental Exposure Level	
HAZ_DES	Hazard Designation	

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

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6NS 0-11

# Tank wash shift Report

January 01 2009 - July 28 2009

TW (21)
REPORTS.
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Date	7-24-	9	•			Classic F	lunnaga Kawa	OF Cald	Flush, HF - Hot l	Dies Di Di	
Leadman	the nearest half gallon.	<u> </u>							riusn, Ar - Act Irgent, P - Preso		
Work	The Hearest Han ganon.	<u> </u>		<u> </u>	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(galions)	" No.	Request	No.	Bay	Bay	Initials
124899	DART	5-06	Carpen	218			<u> </u>	1			CP
222603	DART	42FG	carbon	118			ļ	1			660
324873	Texas	1802	Petro Nagha	118				3_			世人
424298	2 W miller	loun	Brown Dre	11818	16			5			25
524874	InnovPlani	7196	Exi wash ON	14 1115				4			CP:
6	There Plani	517		,							
724803	CES	249	methanol	48		<u></u>		5			5R
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Leadman	Anneno	6							lush, HF - Het		
	the hearest half gallon.		· · · · · · · · · · · · · · · · · · ·	<u>i — — — — — — — — — — — — — — — — — — —</u>	T				rgent, P - Preso		
Work			Dundant Mana	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
Order No.	Customer Name	Unit#	Product Name		(Ganors)	140.	veduesr	3	ізау	Day	Williams -
1	CES	243	Pume	118		<u> </u>	<b></b>	19	ļ		12
224801	CE3	226	manthemal	117			<u> </u>	_3			) /
324802	MARI	4278	corpor	117		·		, 3			SR
4	1-ES.	TOTE	FLAM- L'SWI	11111				N			CP
	O FC	TOIC	Elan 1 Qu	1-11×11				3			725
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Date		7-2109		·	•			·· .		· · · · · · · · · · · · · · · · · · ·	·	
Lead	man	Armanda	)	•			Cleaning P	rocess Key	CF - Cold	Flush, HF - Hol	Flush, DI - Di	esel
Recor		the nearest half gallon.		<u> </u>	<del> </del>					rgent, P - Pres		
1.	Work		इ.1ं∴te dk	Dundant Norma	Process	Heel (gallons)	Drum No.	Time	Bay No.	Time on	Time off	
	Order No.	Customer Name	Unit#	Product Name	Plucess	(Baious)	INO.	Request		Bay	Bay	Initials
1/2	4881	TTIPPLE3	LR23	or ywater	1(8				14	<del> </del>	<b></b>	AR
2	14867	CAS	133	ROSIN	113				3		<b></b>	176
3	24866	CES	206	HOT Waste	11818	2	Drum		3			AX
4		CES.	Tore	Framable Lige	e. 11816				3,			37
5		CES	TOTE:	Aumable Ligeri	-11816				4			CP
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Date		T-17-0	29	. *	,			·.	·			-
Lead		Anner	\( \sigma^{\chi} \)							lush, HF - Hot		
Recor	d all heels to	the nearest half gallon.			<u> </u>	·				rgent, P - Presc		
	Work				,	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
14	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1	14868	Dari	DC 5-F6	carpon	117				3	ļ · · · ·	57	SP
2	24804	Firehird	353	Fuel Oil	118				3			MK
3	( )	CES	tore	Flam 1 91	11816				3			JR '
4		CES	Tore	Flaminiqui	11816				4.			CP
5	74888	THEHURICO	109	Diesel	113				3		ASC.	58
6	24885	lee's	2365	Sodium	119				4			CP
7	14890	CES	210	Base 0,7	118				4		AR	CP?
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Date	7-9-08	<u>}</u>	•						-		
Leadman	Armendo		•		.•				lush, HF - Hot gent, P - Presc		
	the nearest half gallon.	·			Heel	Drum	Time	Bay	Time on	Time off	
Work Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	" No.	Request	No.	Bay	Bay	Initials
124776	I 73	1266	Mines	168				4		_CP	AR
224838	T75	11.30	Amines	118			ļ	d		AR	17.12
32-1857	CES	406	Base oil	119		<u> </u>		4		CP	IR.
424830	Tidefort	10 75	Fael oil	1184				4	<u> </u>	CP	51
524850	CES	234	Coustic	168		<u> </u>		d		-CP	77
624843	Chempak	3854	Affonic	118				4	11/0	CP	AK
724837	JTS	3396	A HEROSTE UNI	a 118				3	14/		57
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Leadman	Armend	2							Flush, HF - Hot		
	the nearest half gallon.			<del></del>	· 				rgent, P - Preso		
Work		1.1 · **. #1	Dun dank Marana	Duaman	Heel	Drum No.	Time	Bay	Time on	Time off	
Order No.		Unit#	Product Name	Process	(gallons)	NO.	Request	No.	Bay	Bay	Initials
124747	Kirschel	6102	Coustil	16.8		ļ <u> </u>	<u> </u>	4		<b></b>	62
22-1739	JIS	755	ButylAceiau	2117			<b>_</b>	1_	<del> </del>	<u> </u>	CT
324742	Tide Pon	1639	Workhalene	21 3				5			775
424748	TTS	151	Pump	1/8				5			572
524760	CES	-608	rase oil	118				4			
624550	CES	252	waste using	218				5			
724737	Chem Pak	8475	wax	118			<u>.</u>	5			77
82-1718	Baker	modkl	crude oil	11128				3			5 7
924557	CES.	406	Base 0,7	420	<del></del>			3	-,,		57
1024799	Liquid Exp.	957	kerosine.	118	·			4_	MIC		CR
1124.829	Fixebird	585	Petro Dist	118				3	NIC		51
12		· · · · · · · · · · · · · · · · · · ·				·				·	
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Shift		and _	·		· )		•		•		)
Date		7-6-	9				·		·	·	
Leadman	_		•						lush, HF - Hot		
	s to the nearest half gallon.			<u> </u>	<u> </u>		7		gent, P - Preso		
Work			Day tool Manage	<b>0</b>	Heel	Drum No.	Time	Bay	Time on	Time off	1
Order N		Unit#	Product Name	Process	(gallons)	NO.	Request	No.	Bay	Bay	Initials
1247	45 Kusner	7023	L. 9001	8-11	ļ			1 4			1.0
22474	4175	3392	Manac Acid	8-11-	16.			4			JL-J
32474	10 ITS .	2042	Petroleum 6,1	8-11				LÍ			JU
42474	11 775	17-707	15. 1/Hwaste	8-11-	16			4			57-J
52473	XIITS	6508	cutterstock	8-11	-16			4			57-76
62473	SITS	7202	XVIENE	8-11-	16			2/			57-7
73124	746 CES	201	light En 15	8-11				4			ゴム
8247	35 115	154	Pumpt	Hose	5 8-1	/		4			57
974.7	31 baker	5 V 2 466	6 crude oil	11-16	1			5		n/c	B-H
10242	18 Baker	mx4856	L crude oil	8-11-1	2-18	75	5915	3		n/c	JE
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Date	7-2-09											
Leadman	Armendo		•			Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, Di - Diesel F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior						
	the nearest half gallon.	l	T	<del></del>	Heel	Drum	Time	Bay	Time on	Time off		
Work Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials	
121719	CES	271	crude eradie					5			JR	
274723	ITE	151	Pump	118				3			AX	
3247/3	Bullzext	1218	crude oil	118	· ·			if			CP	
424721	Firebird	514	used oil					4			SP	
524715	Firebird	514	used oil					_3			BD	
624709	Firebird	8272	XXIEDT					5		:	572	
724757	# FK	11-63	ASPHAIT	1118				3	<u> </u>	·	Di	
824726	CES	104	gas-water	118				5			IR	
924754	175	1266	MEK	117			<u> </u>	4		201	SK	
1024752	IT5	942	caustic	118				31		AR	ST	
11 24755	T.15	761	solvent	117				3		AB	57	
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Leadman	Armando		•				_		Flush, HF - Ho		
	to the nearest half gallon.	<u> </u>		<del></del>					rgent, P - Pres		
Work		1 1 min dl	Dundret Name	Process	Heel (gallons)	Drum No.	Time	Bay	Time on	3	
Order N		Unit#	Product Name		(ganoris)	NO.	Request	No.	Bay	Bay	Initials
12470	211.15	707	W9A-15L	11818	<b> </b>		<b></b>	3,	ļ	AR.	37
22468	3 DAKFK	239832	Hydroles/www	er118				4			CY
324700	Frebird	344	wax	1110 8				0			DK
424546	RER	255758	HXdvo TesTuki	ex 118				N			CP
524543	B.F.R.	256395	HydroTesiwage	118				5	1	<b> </b>	27
62454	1 KFR	260729	Aydyolesiwai	118		· · · · · · · · · · · · · · · · · · ·		5	<u> </u>		DR
724710	CES.	205	waste warey	118				4			CP
8 20169	ofivabird	5603	CUTENSIEK	11128	,			5			572
924705	CES	105	Diesel	118	<del>, , , , , , , , , , , , , , , , , , , </del>			4			CP
102470	2 CFS	249	WUSTE WOLET	118				5		·	JK
112454	2RFR		HYCHOTESTURE	11.8				U			CP
12 94701	Pervo	1318	Lube oil	118				5_			255
13 2470	6 T-2 R Ligh		MER	117		····		3			SI
147470	7 chemPak	2484	Alfoniz	11			`	4			TI
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D	ite	6-30-09	). 			•		· .		<del></del>		
Le	adman	principale	2							Flush, HF - Hot irgent, P - Presc		
Re	Work	the nearest half gallon.	<u> </u>		· ·	Heel	Drum	Time	Bay	Time on		Cleaner's
	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
	124538	ITS	3396	Brake Florid	118				5			JZ
	29,4539	CH5	133	markol	118			]	4			CP
	324540	ITS.	8880	crudeoil	11128				5			J74
	424677	TidePori	1048	JV-8	1184				1			CP
	524541	CES	105	oil-vuntor	118	, , , , , , , , , , , , , , , , , , ,			5			コズ
	6 2467T	TidePort	1048	JP-8"	118				4			00
	724671	R-F-R	274408	N/H Solids	11814				4			P
	821544	TidePori	1-526	Hydro Garbo	18/18		;		5			572
593	9 23 9305	Erpbird	239325	NIH WASTER	118				7			CX
14 -	0 24548	TTS	3392	waste wayer	128				5			275
1	124680	775	7202	methnolyou	2115				V/			CD
1	224525	Dana	1564	HDISCIUP	1181X				3		ARI	55
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Date			6-24-	9	,	*				·	·	
-	dman		JL					_	: CF - Cold F			
		the nearest half gallon.		· · · · · · · · · · · · · · · · · · ·		T			ustic, D - Dete			
	Work	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
_	Order No.	Customer mame	942		8-11-1				7			1-7/3
_1	JUESO	777		Tylene		10	<del> </del>	<del> </del>	1	<del> </del>	<del> </del>	145
_2	24631	ces	210	tisht end	0 7 //			<del> </del>	<u> </u>	<del> </del>		Y.
3	24628	Its	793	Hydrocalbons	8-11-10		ļ		3			DE
4	24627	CES	pump	& Hoses	8-11		<u> </u>		3			JE
5	241633	CES/Petro	1206	Lightenes	8-11-18	<b>5</b>	<u> </u>		3			JE
6	24631	49	754	Brake Huid	8-11-10	<u> </u>			1 4		No	JU
. 7	24118	Tideport	3020	EAStman She	1 81				14			ST
 8	W (021	エナ	905	Methanol	8-11-	6	<u> </u>		گ	<u> </u>		B-4
9	24622	15	Pine	4 Hoses	8-11				5		i i	R-19
10	24626	ITS	10508	ghyco 1	8-11-1	6			4			57
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Leadman	Arman	7				Cleaning F	racess Key:	CF - Cold I	Flush, HF - Hot	Flush, DI - Di	esel
Record all he	els to the rearest half gallon.							stic, D - Dete	rgent, P - Pres		
Wo	rk			·	Heel	Drum	Time	Bay	Time on	Time off	
Order	No. Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1245	31 TTS 6	1922	Surfenic=9	5117		<b> </b>		3			VK
2245	33 T TS	1266	DBF-3	1) 9			<del> </del>	M	<u> </u>		L.P.
3745	35 TidePOVI	1056	Diesel	1134			<b></b>	13			# K
4245	3d Tideport	1019	Diesel	1134		<b> </b>	<u> </u>	1	1 1/1		
5 245	28 Andrews	3070	Calcium SIPON	F118				5	1/1/C		2 K
694	De Hould H	TO C	7			<b></b>		<b> </b>		<u> </u>	
7040	36175	965	Del ergeni	117				3			AR
8245	37 Tideron	1062	017	484		-		4			
924	WCE3_	238	meional	167				3		·	0+12
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Leadman		<u> </u>	<u>-</u>						lush, HF - Hot			
	the nearest half gallon.		· · · · · · · · · · · · · · · · · · ·	<del>i</del>	Heel		iteam, C - Car Time		gent, P - Preso			4
Work	Customer Name	Unit#	Product Name	Process	(gallons)	Drum No.	Request	Bay No.	Time on Bay	Time off Bay	Cleaner's	
Order No.	Customer Hame	947	XVIEVE	7-11	13			4			8-17	7
124614	75	TOUR	D- I Dort	8-11				3			/-	f
229617	7 Depoy+	177	1	7-11				e)				9
324615	775	12303	7-7-					7/2			31	1
424613	IIIS	2044	TRIEthonolam's	e 1-11		<u> </u>	····		<del>-</del>		3 - 8	4
5		-			<u> </u>		ļ	<del> </del>			<del></del>	+
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		the nearest half gallon.				·				gent, P - Preso		
	Work		-			Heel	Drum	Time	Bay	Time on	Time off	
	order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
12	4481	FILEBILD	321	Fueloil	8-11	<b> </b>	ļ	<u> </u>	1			34
20	4479	IT5	761	Linewash	8-11-1	<del></del>		ļ	J			JE
32	4478	Petro EXP.	1028	Glycol Ether	0 -11-	16			3			UE
4 6	74489	CES	-239	Wiwater	8-11-10	<b>[</b>		ļ	5	<u>                                     </u>		8-14
5	26200	Tideport	2026	Heavy Pyrolish					14		<u> </u>	32
6	26197	Bullzege	677	Cruceoil	e-1)				5			B-H
78	4488	ITS	693	chloratydiate	8-11-	16	ļ		4	<u>.</u>		32
8	74485	#-15	942	usedoil	8-11-	12-16			5		<del></del>	B-14
9	74486	775:	171	pump & Hoses	8-11		ļ	<u> </u>	4			JC
10	26198	Cross Road	(0)	1.	8-11				5		<u> </u>	B-A
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Record	all heels to	the nearest half gallon.	,			·				rgent, P - Pres		
	Work			Duraturat Monaga	Dunaian	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
O	rder No.	Customer Name	Unit#	Product Name	Process	(ganors)	<del> </del>	vednesi	140.	<u> Gay</u>	Day	muais
12	4492	petro	222	cuiter STock	11188		3 p	tun-	5		0.02	DK
22	4512	TIS	942	WGA-156	11818	709	01.	-	1	101/6	JH.K	CY
_32	4511	TTS	7003	COGA-15/	218		ļ		13	#10		17-K
42	4516	TTS	6508	Glycol	1 (8.			<u> </u>	1			روح
52	4504	Texas,	8124	NaPhTha	118	<u>.</u>	<u> </u>		5	<u> </u>	<u> </u>	3R
62	4515	Fireniva	341	Flamable Liqui	118		<b></b>	<b> </b>	5	<del> </del>		D.K.
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Leadman		<u> </u>	•		,				lush, HF - Het rgent, P - Pres			
	the nearest half gallon.	<u> </u>			Heel	Drum	Time	Bay	Time on	Time off	Cleaner's	1
Work Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials	1
126097	COS	233	IN water	8-11				- 4			ゴレ	]
226098	CK S	239	Wilvater	8-4-	16			3			B-1+	
326031	ITS	6301	Alum wehr	8-11-10	6	·		_ ک			B-H	
42603	Peter Exp.	102-8	Feel Stock	8-11				4			ゴレ	
5 21,099	Team	765	Brownguesse	8-11				5			BH-5	12
621000	mp.c	6308	(mode oil	8-11			·	5			B-4	1
726088	Global	51-2	Olynater	8-11				H			57-72	ļ
876096	Global	15TT-2	olymater	8-11				3			JE	
926089	工ts'	10503	gly co	8-11-1	6			Ц			ST	
1024083	Baker	15124012	Waste	8-11				3		nc	JE	
1196085	CES	243	Reckesin	7-11				4		ne	JL	
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Shift Date Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel Leadman F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior Record all heels to the nearest half gallon. Heel Drum Time Bay Time on Time off Cleaner's Work **Customer Name Product Name** (gallons) Bay Initials Unit# **Process** · No. Request No. Bay Order No. 270 12-15-11-16 3 10 11 12 13 14 15 16 17 18 19 20 21 22 23

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Rect		the nearest half gallon.	,		ı —	l Heel				rgent, P - Pres		
	Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24784	CES	223	leg. westernil	E 1284	<b> </b>		<b></b>	3			53
2	24 786	CES	100	Ext wash	11/6	··			4			CP
3	24731	Raker	24666	Extrucish	11/6				Й		IX.	GP
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Record all h		ne nealest han gallon.	· ·		1	Heel	Drum	Time	Bay	Time on	Time off	
Orde		Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
		Innevolar	1 189	mineral oil	118				3			JR
2247	187	775	a42	Pot xm or	118				4		SI	100
3/2/7	79	Global	48048	Tallon	118/6				3			FR
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eadman		<u> </u>	•						flush, HF - Hot I		
	to the nearest half gallon.	T	,	<del></del>	Heel	Drum			rgent, P - Preso Time on	Time off	Cleaner's
Work Order No	Customer Name	Unit#	Product Name	Process	(gallons)	" No.	Time Request	Bay No.	Bay	Bay	Cleaners Initials
124794		N-T-1	O dywater	4-7-1	-18			4	"		57-5
2	Inversion!	1196	alynol Ether	18-11:				3			J25
3	CES	100	Folonly	14		· .		N			7/
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Lea	dman	Avener	40							Flush, HF - Het		
Rec		the nearest half gallon.			<del> </del>	·				rgent, P - Preso		
	Work			_		Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
	Order No.		Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
_1	24858	MRC	6213	crude oil	118			<u> </u>	3		51	3
2	29791	Fireberd	356	Fuel oil	118		ļ	ļ	3_	<u> </u>	SI	U/\$
3	24796	DART	1705	N/H carbon	118				4			CP
_4	24414	(ES	270	HOZW-40010	-118		·		1			1+K
5		CEC	TOIC		1/1/16			<u> </u>	4			CP
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		the nearest half gallon.	1	<u> </u>	<del>i</del>	Heel	Drum	Time	Bay	rgent, P - Pres	Time off	
	Nork der No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
	1872	Huyi	119	Auto Everze	112				U)			2
	1893	HUYS	110	Base Oil	11.0			1		<del>                                     </del>	<del>                                     </del>	CP
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	(874)	pan	1 4 2 - (	Carbon	1-1->		<del> </del>		1 3	<del> </del>	<b></b>	CP.
421	1898	CES	271	or ywar	1/3			<u> </u>		<u> </u>	<b> </b>	DK
520	1869	Danamic	2551/	N/X SOLLOS	11816		<u> </u>		5			5%
620	1891	DYNOUS	2520	N/1+ Solide	11816				5			57
720	1886	Dynamil	2556	N/H 50/ing	11816		Ĺ		5			JR
81	11084	Kin DER	11-41	MOUSTESOID	R11 X 1 X	16 25	0 00	076	3			AR
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Leadman	Arnenic	10	•						flush, HF - Hot		
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Work				_	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
121862	R&10	10	Sall	113		ļ	ļ	3			56
224864	CES	234	Was levere	108			<b></b>	4	<del> </del>	10	37
3/21/777	II3	175	6)2001	11818		ļ		14	-	AR	255
4 24863	ITTS	6001	Faity Acid	128	ــــــ	<u> </u>	1	3	<u> </u>		S/
524780	1eels	2095	Tanoil	118				4		A/C	SIL
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	the hearest half gallon.			<del> </del>	· · · · · · · · · · · · · · · · · · ·				rgent, P - Pres		
Work		فادر و د و و	Dundanh klasson	Dennina	Heel (gallons)	Drum No.	Time	Bay No.	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(ganons)	IVO.	Request	INO.	Bay	Bay	Initials
124833	ITS	3396	N/Hwuste L	NICO		<del> </del>	<del> </del>	1		AR	CH
224855	Calgan	11/014	Carbon	1186			<del> </del>	9	<b></b>	CP	7
3/24/5/2	ICLEEN PEUSKI	8009191	oil vunier	11818				13			5/
421860	Team	163	Euride	117		·		4			CP
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	Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
	24413	CES	104	1/H water	8-11				3			JE
2	24412	CES	213	W. water	8-11			<u> </u>	4			JC
3	24732	FIRBITE	A-611	Lube oil	8-11-	12	·		3			JE - 3
4	24852	Contirum	7 7	tes	8-11				2			26
5	24731	Baker	SV 2466	6 Cruzeoil	12-8	-11			4		A/c	JC
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adn	nan	•	<u> </u>							lush, HF - Het l		
		the nearest half gallon.		<u> </u>	<del>ii-</del>					rgent, P - Preso		
	Work Irder No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
10	4854	Aurt	109	Antitreeze	8-11				3			-fa-
		CES	213	Oilywater	811				4			フレ
3		CES	104	W-water	8-11				3			JE
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eadman			· / ( (			Cleanino F	Process Key:	CF - Cold F	lush, HF - Het i	Flush, Di - Die	sel
eaumen	the nearest half gallon.		•			F/S - Flush/S	Steam, C - Caus	stic, D - Deter	gent, P - Presq	lve, Ex-Exic	rior
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	
124831	Tilepurt	7-4-17	FUEL DI	8-11			ASAA	3			57/5
224549	401-1	109	hobe o'	8-4			ASAB	<b>7</b>			CP /3
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Lead	man	Armonto	<u> </u>							iush, HF - Hot			1
Recon	d all heels to	the nearest half gallon.	· · · · · · · · · · · · · · · · · · ·		<u> </u>	·				gent, P - Preso			4
	Work			D	Sun and and	Heel	Drum	Time	Bay	Time on	Time off		I
	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials	4
12	4730	1 15 4	1130	Lube Oct	11.2				5	1 7	**************************************	D &	1
25	24731	Baker	24666	Oil Slarry	11812				5	N. (C	· · · · · · · · · · · · · · · · · · ·	17.45	1
39	4718	Baker	481	crude Di]	11128	2			3	N/C	C	17	
4	24732	trisher	1070	rubeoil	118				И.			19	
5	247201	1770	6507	Diesel	118				il			OP	
6		CKG	TOTE	7	10010	»		-	J			OP	
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Leadman	Arman	do	•			Cleaning F	Process Key	CF - Cold I	Flush, HF - Hot	Flush, DI - Die	sel
Record all heels to	the nearest half gallon.		· · · · · · · · · · · · · · · · · · ·	<del></del>	·				rgent, P - Presi		
Work					Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
124725	CES	7253	was culler	1186		]	<u> </u>	14			CX
224711	sludge.	Pump	Siddse	11128			<u> </u>	5			26
324727	CF3	234	waste mela	11816		<u> </u>	<u> </u>	3			AR
424728	CES	205	waste wares	113				4			CP
524729	CES	256	oil suesce	11816				3			AR
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Leadman

Report all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

Leadr	nan			•						1001, 111 -1101		
Record	all heels to	the nearest half gallon.	· · · · · · · · · · · · · · · · · · ·	<u>,</u>				ive, Ex-Exter				
	Work					Heel	Drum ·	Time	Bay	Time on	Time off	Cleaner's
0	rder No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
	4770	FTC	7003	ACI-H	8-11				4			JE
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	dman	the nearest half gallon.	2	•		,				Flush, HF - Het rgent, P - Presc		
Rec	Work	die deglest dan Banon-	<u> </u>			Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1	24761	Fivebird	343	meiAxh	1110				\3			51
	24763	ETC	1:1-922	Brakefluid	718				W			CP
3	24762	Rivelive	261	Brike Elvid	118				6			TR
	21767	TTG	LI 965	TA-GIVEDICA	rid 118		·		3			57
5	24764	775	798	HOVOHVON	118				1			09
	24769	ITT C	6701	Delevient	118				3			1.2
. 7	24766	TidePon	1049	DIR 1+0F-250	1841				5			P
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Shift Date Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel Leadman F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior Record all heels to the nearest half gallon. Heel Cleaner's Drum Time Bay Time on Time off Work Unit# (gallons) No. Bay Bay **Customer Name Product Name Process** Request No. Initials Order No. 811-1 3 8080 3 0 8-11-16"200 5015 B-14 12 13 15 16 17 18 19 20 21 22 23

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Leadman	Arwand	nt							Flush, HF - Hot		
Record all heels to	the nearest traif gallon.		_						rgent, P - Preso		
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's
124/048	CES	260	cayst, e	12816	·			3	111-1		57
224645	773	6501	Polymer	11868				5,	NIC		275
324647	PETVO	1318	rube 0,7	118				PL			CP
421605	T75	942	Prepionie Orci	1117				4			9
5	176	948		,		ļ.,					1
62-16-19	Firebiro	352	Fairs Acid	11/8		ļ		4			CP
7	<u> </u>		Lube of	168				4	1 , ,		1
8	CES	254	Caustic	118				4	14/0		57
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Lead	man	the nearest half gallon.	-0,0							gent, P - Preso		
Recon	Work	the healest tran ganon.	<u> </u>		·	Heel	Drum	Time	Bay	Time on	Time off	
١	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
15	4679	Its	6201	MEA	8-11				5			3-4
2	24/1057	Dynamic	FT517	Olysludge	8-11				4			ST
3	24676	team	Tres	Cholines	8-11				5			0-4
4	24613	Hurt.	109	pise / Anithan	8-11				5			JC-B-1
5	24675	Tiseport	1055	Lantuel	8-11				5			13-17
6	24674	ITS	1001	Gasacc	871-1	2			4			Je
7	24525	DANG		HOI	18				3		NC	JE
8	24678	CES	205	N/H Wales	y-11				4			ぴく
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Leadman									lush, HF - Hot		
	the nearest half gallon.			<u> </u>					rgent, P - Preso		
Work		a a s ea ad	P	9	Heel	Drum No.	Time	Bay	Time on	Time off	Cleaner's Initials
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	NO.	Request	No.	Bay	Bay	
124664	1-15	2042	41304 1/4	8-11			ļ	ك			8-4
224608	J-75	1130	PMAC	8-11-	16			4	<b></b>		7
321609	TTS	942	0100	8-11				3			JE
424659	CES	233	Warewater	8-11		, ,		3			विस
524650	Hurt	109	DIL	8-11				4			UL
624660	工态	693	AL 304	8-11				3			35
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Leadman		<u> </u>	•			Cleaning F	Process Key	CF - Cold F	lush, HF - Hot	Flush, DI - Die	sel
	the nearest half gallon.		<u> </u>	<del></del>	111				rgent, P - Preso		
Work	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
Order No.	Customer Ivame		DC1		1	140.	reducar		Lauy	Day	B-H
124662	150	965	~~~	871-	16		<del> </del>	5	<b> </b>		377
224661	TIS	982	Polipmer	8-11-10		ļ	<b>-</b>	4			20
3 24660	JETS	7002	DEA	8-11-	16			4	<u> </u>		2
494658	FURDITO	1138	45-le/	39-11-	16			3			JE
5 24665	CES	228	wwater	8-11			<u> </u>	5			B-H
62400	世去	105	Panp & Ho	ses	8-11			4			25
7 24663	Toport	3009	Renker	8-11-	18			3			13
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eadman		11					rocess Key:				
Record all heels to	the nearest half gallon.			<u> </u>			iteam, C - Cau				
Work			Dundant Name	0	Heel	Drum No.	Time	Bay No.	Time on Bay	Time off	Cleaner's Initials
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	140.	Request		Day	Bay	inidais
124606	75	128	Pump & Hos			<del> </del>	<u> </u>	4	<u> </u>		100
224653	775	761	1 ignosultate	8-11				3			JE
3/24/658	FIRESE	7138	Methyl Ester	9-11-	16	<u> </u>		3		n/c	35
4246ds	ITU	6301.	truglycol	8-11-	16			3			52
524652	ITS	6701	PEG 300	8-11-	16	<u> </u>		_3_			JE
624154	F-75	6508	EThan okumin	8-11-	16			4			JU
724656	ITS	987	Retrodist	8-11.	16	1		H			357-
8 24657	CES	25	Y W. Walel	8-11	-16			4			57
924624	CES	227	gasquetel	8-11				5			B-14
10 24/17	1	6337		7		<u> </u>		755		<b>-76</b>	TO THE
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Leadman		<b>フレ</b>	•						flush, HF - Hot		
	the nearest half gallon.			i	Heel	Drum	Time	Bay	rgent, P - Pres Time on	Time off	
Work Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
124639	775	2044	OPGI	8-11-	16			3			JE
24(21)	e do A	3009	RUIVI Arelate	8-11				S			8-H
2041.86	Rake!	SV 26092	50.11.11.00	8-11		ŀ		R			JE
1 211111	TIS:	897	Tube of	811-	16			4			CP
407095	1775	850	mar Famon	8-11-	16			3			PL
57400	0.55	200	Rod Rosin	8-9-	11- 11	Sals		4			テロ
2011111	775	707	Drachacks	P 8-11				4			Ji.
174618	711	7003	ahro (	8-11				5			8-4
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Leadman	Arnende	)	•						Flush, HF - Hot		
	the nearest half gallon.		,	<u> </u>					rgent, P - Preso		
Work	<b>3</b>	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
Order No.	Customer Name		_ , , /		(Bonone)	1.0	Ticquooi	7		Day	Hilliais
124637	1-1-5-	754	Flyid	11821			<del> </del>	12,			26
224635	ITS	7002	NP9-5	128			<b> </b>	4		l	7
324632	Baker 6	379	water oil	118				1			CP
424637	Andrews	7356	Rewash	117		· · ·		5	<u> </u>		272
524636	TIGEPOYT	2005	revosene,	4181		ļ		5			972
624604	ieam	822	Trans. Pulid	118		·		3			SI
724629	Tidepen	1042	JP-8	1184	· · · · · · · · · · · · · · · · · · ·			5	1 , 1		JR
874640	TITS	850	MarfOAM	118				3	1//		57
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Leadman	Anna	110	•			Cleaning P	rocess Key:	CF - Cold I	lush, HF - Hot	Flush, DI - Die	sel
Record all heels to	the nearest half gallon.			· · · · · · · · · · · · · · · · · · ·					rgent, P - Preso		
Work	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
Order No.	Customer Hame		6500 GD-LP		30			d			00
1246/6	0 1 1				-		<b></b>	to			22
27467	Hndrews	5 570	Calciumsteam	1181	<b>)</b>	<del> </del>	<b>-</b>	5			
374503	Andrews	73.56	Kesin	110 10			ļ	3			5/
424617	T 13.	2043	Sei UP	11818				4		S.	Sta
574619	CES	234	waste feet by	113		<b>!</b>		5			
624620	BUILZEVE	30224	Crudeoil	100				5		:	272
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Leadman	Lui	5	•						lush, HF - Hot		
	the nearest half gallon.	<u> </u>	<u> </u>		Heel	Drum	Time	<del></del>	gent, P - Preso	Time off	Cleaner's
Work Order No.	Customer Name	Unit#	Product Name	Process	(gálions)	No.	Request	Bay No.	Bay	Bay	Initials
124528	Andrews	5070	Cokin Stevate		15			5		N-C	B
224527	Texasoi)	8162	petro Noptha	8-11				3			3-6
324929	775	2044	polymer	9-11		ļ		3			15/5
47.4531	TIS	6201	Lubersil	8-11				3			7
57,4530	475	17 707	Xylene un 130,	8-11				41			57
6			1								
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Leadman		JU.				, -	rocess Key:					
	the nearest half gallon.	<u> </u>		<u> </u>	Heel	Drum	iteam, C - Cau Time	Bay	Time on	Time off	Cleaner's	4
Work Order No.	Customer Name	Uńit#	Product Name	Process	(galions)	1	Request	No.	Bay	Bay	Initials	1
2/1/87	Firebird -	323	Aromardic Hedro	8-11	.5			3			5	1
-0.1.03	TITS	6001	Glycol	8-11				7			72	‡
279(04)		785	browngrease	8-4				3			30	1
394681	Team Tels		to W	2-11		43.0	<del> </del>	4			5-7-	1
424691	1-13	6508	,			the s		y			J/	1
5 24698	775	2044	glycol	8-11	<u> </u>			4				
6 24695	US	208	w. Waler	8-11				1			JU	
724692	1-75	15-942	W- Wales	8-11-1	2	<del> </del>		7			0-H	
824199	TTS	2043	Triethanolan	ne 8-	1			5			B-H	
924688	1-15	7002	Dowate tre	adnest	8-11			5			B-47-	ゴレ
10 2468	+ lideport	T-448	E Ther	8-11				. 2			B44 4	たと
11 24696	ITS	755	Acetate	8-11.				3			JE	
12 24 694		233	10, water	8-11				4			ナし	
13 24704		344	Warp	8-11				Ś		n/e	B-H	て
14 24 686	d Rill	24686	A Hyd Wafe					4			57	
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eadman		<u> </u>			-				Flush, HF - Hot		
	the nearest half gallon.			<u> </u>	·				rgent, P - Preso		
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner: Initials
124667	TidePort	917	59-8	118				3			AR
224655	CES	105	Clase 1 Sludge	11818	56 90	10	ļ	3_			AX
3 24645	TTS	6507	Polymer	17878		·	<b></b>	5,		CP	275
424669	CES	409	alx waser	118			1	4			
524668	CES	400	Base Oil	118	<u> </u>			2	11/2	07	25
624525	Dana	1564	H) J Sei-Ur	1118		<b> </b>		3	N/C	pt 1	51
724670	J 15	6503	) elergent	76				21	· ·		3
8 94672	Williams		Oil yazier	11216			^	01		· · · · ·	
9	CEC	1016	FY	11816			·	4			CY_
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Leadman	n		ران							Flush, HF - Ho rgent, P - Pres		
		he nearest half gallon.	<u> </u>		<u> </u>	Heel	Drum	Time	Bay	Time on		
	ork	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request		Bay	Bay	Initials
Orde	er No.	Customer Name	6901		8-11-	130			11	1		177
1/9	5/3				0.11	<del>                                     </del>	<del> </del>	<del> </del>	13	<del> </del> -	<del> </del>	125
224	514	773	7002	BrakeFluid	8-11	<del> </del>		<b></b>	1	<del>-</del>	<u> </u>	1-7-
3 24	506	leam	402	Colymer	8-11-1	¥	ļ		4			172
4 4	569	ITS	707	Orake Fly. d	8-11-	16	<u> </u>	<u> </u>	3	<u> </u>		JE
5 24	1508	ITS	CP13:	9/4001	8-11-1	6			3			DE
624	507	ITS	6201	muneraloil	8-11-	16			3		·	JE
704	1501	Ticepos	3 015	Lubeoil	8-11-1	2			3			JE
821	1492	Petro	222	cutters tout	4-11-	18 4	Druns		5		106	05+
924	570	Its	980	Polyner	8-11-10	b +8			3			DE
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Leadman	Armar	do	•						lush, HF - Hot		
	the nearest half gallon.		<u> </u>	<del>i — — —</del>					rgent, P - Preso		
Work		# # * *E .#E	Product Name	Drosson	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
Order No.	Customer Name	Unit#		Process	(ganoria)	INU.	reducar		L LOGIY	Day	AP
1/24480	JIS	155	Bump	168_		ļ	1	3_	ļ		1//_/
226196	MPC	6050	crude oil	118	-	<del> </del>	<b></b>	3			AR.
3	Cr6	TOTE		11866		<b></b>		<u> </u>			
424503	ITS	152	Pump	118		<u> </u>	<b> </b>	3			AX
57450]	TTS	6701	nc1-11	168	·	<u> </u>	<u> </u>	1/			CP
624500	ITS	987	PoTassiem	168		<u> </u>		3	-01-1		SI
724492	Pervo	222	CUITERSIOC	5118		ļ		0.45	1/1/4	·	27
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Leadman	Amous	(a)	•						Flush, HF - Hot		
	o the nearest half gallon.	<u> </u>	<u> </u>	<u> </u>	1122				rgent, P - Pres		
Work	Ourteman Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
Order No.	Customer Name		7	1100000	(Bendite)		reducer		Lyay	Day	TITO TO
124487	115-	7003	used oil	11 340			<del> </del>	5	<del> </del>		12/K
229486	IIS_	2042	Action	11716		<u> </u>		1			98
326196	MP.C	6050	Ext wash	11.15				3			H,K
424491	ETS	148	Pump Oil	218				5	1		JR
5244 82	TT5_	850	casion of	109			/	5	NE	<u> </u>	57
624483	CF5	100	waste solia	41184	1450a	al-	R/6	d	1	AR	CP
724c191	chichem Pa	2573	wax	128	V			_{3_	N.C	1	A2
82-1495	coros Rend	101	Re wash	11716				4	, ,	NIC	epy
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Leadman		72	,						lush, HF - Hot I		
	the nearest half gallon.				Line				gent, P - Preso		
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
124494	TTS	6503	Lube pil	8-11-1	2-16			2/			56
294493	CrossRoad	101	lince AFfel.	\$7-11				4			JZ
374496	team	ner	1-terbrate	8-11				5			B-H
424482	Its	800	Lubeoil	8-11-	12-16			5			B-H
524498	ITS	8880	DCT-11	8-11-	10			4			25
624497	Its	755	Lube oil	8-11-13	10			3			JE
724490	chem Pack	2573	Steal Alcohol	5-11				3			JE
824495	CES	205	REDRESIA	9-11-1	8 1105	9()		5			3H-JK
924499	CFS	233	w-world	8-11				5			3-14
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Date		-09	-		•						
Leadman	Armar	do					Process Key: Steam, C - Cau				
	is to the nearest half gallon.	T	T .	<del>                                     </del>	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Work Order N		Unit#_	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1	C.F.S	100	Ext wash	1114				5			JP
22618	6 TidePort	1021	5-P-8	1184				5			SIR
32616	110 100	21412	waver Drilling	118/6	500	an	RIO	3		<u> </u>	AP
42619	3 Inner Plani	3348	Lube oil Ado	11812	_	hac.	1	5			JR
5	(F5	298	Ext wash	1114				3			A.K.
6 2619	75 Frehird	122	perrolum	118				5			TR
7	116	Tore		11816				4	1		CP
8 2619	7 Rull7e118	677	crudeoil	118				5	11/	,	5 P
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Shift			6-16-9	•								
	iman		30	•			Cleaning I	Process Key	: CF - Cold F	lush, HF - Hol	Flush, Di - Di	esel
		the nearest half gallon.			<u> </u>	·			ustic, D - Dete			
1	Work		·			Heel	Drum	Time	Bay	Time on	Time off	
	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request		Bay	Bay	Initials
1	26191	Tide port	1024	Fuel oil	8-11	ļ			5			3-4
2	26189	Tideport	1071	Nuphthalene	8-17			<u> </u>	5			13-14
3	26190	JAM	305	Oiesel	8-11		ļ		4			37-5
4	26187	· ITS	6508	DrakeFluics	8-11-	14	<u> </u>		4	<u> </u>	<u> </u>	57
5	2-618	1. FUBUL	3358	Feed Stock	8-11			<u> </u>	3			JE
6	2-6185	775	754	MEA	811-	10		<u> </u>	13			JE
. 7	26192	CES	249	Caustic	37-11		]		3			JE
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Shift Date Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel Leadman F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior Record all heels to the nearest half gallon. Time off Cleaner's Bay Heel Drum Time Time on Work (gallons) Bay Bay Initials **Product Name** · No. Request No. Unit# Process Order No. **Customer Name** 10 11 12 13 14 15 16 17 18 19 20 21 23

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Date	6-15	<del></del>	•								
Leadman	Arman	do			.•				Flush, HF - Hot rgent, P - Preso		
	the nearest half gallon.				Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
VVork Order No.	Customer Name	Unit#_	Product Name	Process	(gallons)	No.	Request	No.	Bay,	Bay	Initials
	Trimac	49-6783	scrullarex	11818			·	3	N/C		57
226030	<b>►</b> ₄	5-2	N/h mise organ	ic 11816				0	1,,		KP
326154	Perro	1991	enide oil	118				5			Jik
426159	TidePor	3009	hube oil	113		·		4			CP
526157	CFS	228	waste waich	11816		————————————————————————————————————		5			JR
626171	Tidepori	1073	JP-8	1184				4		-	CD
726172	175	761	614CM1	£C.7.				5	·		DK.
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Date		DL_			4	f=:			·		
Leadman		6-15-9	•						lush, HF - Hot I		
	the nearest half gallon.	· · · · · · · · · · · · · · · · · · ·		<del></del>	Heel	Drum	Time		Time on	Time off	
Work	a	Unit#	Product Name	Process	(galions)	No.	Request	Bay No.	Bay	Bay	Cleaner's Initials
Order No.	Customer Name			8-11-	1	1.0.	, inducer	7	1	Day	52
126178	1-15	7202	Spechard		6		<del> </del>	3			06
276176	JTS	755	ghicol	8-11-11		<b> </b>	<u> </u>	1		·	JE
326032	Trimac	49613	Latex		18			3			25
426180	LEES	955	FattyAcid	8-11				4			JL
52-6175	115	6503	ETnylenglyco	8-11-	1/2			4			57-7
626158	CF3	NB 2507	MH Sludge	8-11-1	110	5215		2/			ST
726179	IIS	7002	Polymer	8-4-	18-16	2		5			B-H
826174	エな	10901	B10 Buse	8-11.	-16	:		5			B-H
926181	ITS:	3396	Lube oil	8-11-	12-16			4			152
1026177	17S	3392	9/400/	8-11-	16			5			B-H
1126182	ITS	982	Dynalene	8-11-	4			£3.			JE
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Sh		) .0	2rd 6-13-9	·				•				
Da			10-13-1	•			Cleaning I	Process Kev	: CF - Cold	Flush, HF - Hol	Flush, DI - Di	esel
	adman	the nearest half gallon.	7,0	•		•				rgent, P - Pres		
Ke	Work	His Healest Han ganett.				Heel	Drum	Time	Bay	Time on	Time off	
	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
	126/67	DATT	OC SFG	carbon	8-11				14			JL
	226162	ITS	075	nit Reg.	8-11-16	3		1	3			JE
	12/6/57	Ticeport	1605	10-8	x11				4			JL
	476170	7-7	2043	Himson	8-11-1	6			13			772
	7		10010	gww.cr				1		1		
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Leadman		-J.	•			Cleaning P	rocess key:	CF - Cold )	lush, HF - Hot rgent, P - Preso	riush, DI - Dia	ein-	1
	the nearest half gallon.	, <u></u>		<del></del>	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's	1
Work Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials	· .
	FINDICE.	1024	Esler P. toh	8-17-	10	·		5			8-4	JJ
226156	TERON.	3010	Ext. only	15-18				3			#JZ-	JC
3 201							·					
4 2 0168	Firebird	5407	Pathy Acid	8-11-	16			5			R-H	ーフ
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Date	1	29	· · · · · · · · · · · · · · · · · · ·			Cleaning F	rocess Kev	CF - Cold	Flush, HF - Hot	Fluch DI Di	eeni
Leadman	of the nearest half gallon.	00-							rgent, P - Pres		
Work	A Mile Hearest Hen Barren				Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
126034	TTS	942	JEFFCOOL	118		<b></b>	<u> </u>	5			TIC
226085	CES.	243	Red Resin	11818			<u></u>	14			CP
325948	ITS	7003	BenzaFlex	118				5			JK
426083	2+Baker	24072	100510	11816		<u> </u>		3	1		5/
525949	CAS	70132	POLYOIS	118			<u> </u>	4			CV
623042	chem Pak	2554	wax	118				5	<u> </u>	-	2/
726153	ITS	6508	G1760(	118		·		4	1-1-1-		(H)
826032	Trimac	49-67/3	Seice hotex	118				3_	W-/C		51
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Dat		6-	11-9	•	•	*						-	
	dman		71/							lush, HF - Hot l			1
Rec	ord all heels to	the nearest half gallon.			<del> </del>	·				rgent, P - Preso			1
-	Work		_		_	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's	-
	Order No.		Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials	-
1	26164	selo	10	Emply dean	4-11		1		4			JC	
2	i —	chem Pack	2799	cruse oil	8-11-1	2			4			5.7	
3	76146		8880	BIO Diesel	8-11-	16			3			36	
4	26154	Potro	1991	indeoil	9-4				_5_		n/C	to 8-	41
5	26030	Kineo	き-2	miscorganic		12		·	4		nlc	JU	ĺ
6	210-22	Trinac	49-6713	toles	9-11				3		nk	JE	
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Date		6-11-8	9	•		•		-				
Lea	dman	Armon	13							Flush, HF - Hot		
Reco		the nearest half gallon.			r					rgent, P - Preso		
1	Work	A	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
	Order No.	Customer Name	}			(Benons)	140.	request	110.	Lowy	Doy	00
_1	26081	115	2042	Polymer	11818		<del> </del>		4			
_2	26151	CES	210	well hand	123		<del>                                     </del>	<b>_</b>	5	17	·	7.6
3		Trimac	48-1015	Seius Lolex	1118		<u> </u>		3	1/1/		51
4	26086	CES	15/09	wasip Solids	21816				5			IK
	26075	CES	2526	SIUdge	11816				4	1		CR
6	26084	MPC	6308	crudeoil	118				5	NIC	· .	JZC
7	16097	CE3	643	1/14 Sludge	118		<b>}</b>		3			HX
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Lea	idman		5U	•				Process Key:				
Rec	ord all heels to	the nearest half gallon.	· · · · · · · · · · · · · · · · · · ·	r	<del></del>	·		Steam, C - Cau				
	Work					Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1	25 978	Tidefold	1048	Eastman	811			<u> </u>	4			エム
	25437	Tideport	876	EN-201	18				5		N/c.	BBA
3	25480	Kissher 1.	7034	Calcius	8-11		·		4			5T
4	25917	tidepoid	1015	JP-8	8-11				3			JE
	25979	Kirebuz	322	" Evel oil	8-11				<u>5</u> )			JE
		CKG	-Pot	es 3	8-11-1	14			コ			JE
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Leadma	ın		1							Flush, HF - Hot		
Record at	l heels to	the nearest half gallon.			<u> </u>					rgent, P - Preso		
	Vork			_		Heel	Drum	Time	Bay	Time on	Time off	
Ord	er No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
125	999	CES	221	W. Water	81/			<u> </u>	4			7
2 25	996	(A)5	409	out agles	8-11		ļ		3			JE
325	997	CES	222	Base or	8-11-1	2		<b></b>	<u> </u>			10-4
425	998	CES.	271	W. water	8-11			<u> </u>	5	<u> </u>		B - H
525	995	Petro EXP.	977	Wwater	7-11				3			It.
625	-922	Part	2 Tota	5 Carbon	8-12	4	<b></b>		2			126
72	5999	Petro Exp.	1206	Lube acc.	8-11-13	2-16						JZ
825	920	Baker V	00 31388	Waste Soil	8-11-14	<u> </u>	<u> </u>	ļ	3			JE
92	5984	Tideport	1501	oil	8-11				ک			8-4
10											<u> </u>	
11			3.00									
12	. •						·	· · · · · · · · · · · · · · · · · · ·				
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Date	6-3-0	9	-	•			······································		·	<u>.                                    </u>	
Leadman	Armando	<u> </u>	•				Process Key:				
Record all heels to	the nearest half gallon.			· · · · · · · ·			Steam, C - Cau				
Work	•	11:24	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
Order No.	Customer Name	Unit#			(Ballotta)	140.	vedacer	<del> </del>	1963	Day	+ IIIIII ALS
125998	CES	271	wastewire	(118			ļ <u>.</u>	3		<del> </del>	12/-
226002	CES	234		118		<b>↓</b>	<b></b>	5	ļ	ļ <u> </u>	15.45
326003	CFS	222	oil y water	118		ļ	ļ	5	1117		D.K.
4 25985	Baker	23132	Fire woleve	11812		<u> </u>		3	J/Y/C	-	56
525920	Firebird	347	Base Dif	11-8				9			515
6	CKG	TOTE		11816				4			20
726004	Texas	5893	Petro Naphita	118				5			2%
826005	ENVIYO	102	oilywared	118 18	3-0-	rous		4	51		CP.
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Date			1015-9					··		·	·	
Leadm	an		Ji							lush, FIF - Hot		
Record	all heels to	the nearest half gallon.			· · · · · ·					gent, P - Preso		
	Work			Dua duat Mana	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off	Cleaner's Initials
	der No.	Customer Name	Unit#	Product Name		[Banons]	140.	vedaesi	71	13ay	Bay	T/
120	20.69	175	\$3392	Propanic Acid	8-11		<del> </del>	<b> </b> -		<b></b>		
22	4010	ITS	6503	9/4col.	8-11							20
3/2	6008	ゴてら	965	Anglamal	8-11		<u> </u>		5		nle	B-14
12	6007	TTS. L	76 350	N/H Waste	8-11				4			JC
5/2	5940	CES	V426:	Waste Slude	8-11-1	6-18			4			31-0
60	6006	08.5	72563	methans!	8-4-1	6	<u> </u>		5			15-H
7/2	5985	Baker	SV 231321	Eisework!	8-11-12				3		n/c	JE
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Leadman		<u> </u>	•						Flush, HF - Hot Irgent, P - Presc		
	the nearest half gallon.	· · · · · · · · · · · · · · · · · · ·	T	1	Heel	Drum	Time	Bay	Time on	Time off	
Work	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
Order No.		N34854	<del></del>	8-11-1	<u> </u>		1.54555	171	<del>                                     </del>		
174017	CES		<u> </u>	0-11-1	0	ļ	<b>}</b>	177	<del> </del>		ST
226022	CES	N5268	NH Solids	8/1-	(0	<u> </u>	ļ	H	<u> </u>		VL
325737	CES	607	Regulated Wasto	بالللا	0			2			JP
425924	Raker	rox 276	4 n/450/ids	8-11-16		<u> </u>		3			JE
526023	Emiros.	102:	Olly Sludge	8-11-18	110	rums	C/P	4			84-1
626036	Dart	4216	rowbon	8-11				3			JE
706018	775	10901	Chlock drate	8-11	-16			4			0H- 1
82602	ITS	6701	alycol	8-11-10	0	:		24			BH-JY
9210025	CRS	256	Desth	9-11-				3		nla	JE
10 0001	-Pamac	496735	Later	9-11				5		2/0	BH-J
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Date	6-4-09	<del>[</del>	•		•	Cleanine B	mores Key	CE - Cold I	lush, HF - Het	Fluck Di Di	anni
Leadman	the nearest half gallon.	<u> </u>							rgent, P - Prese		
Work	· · · .				Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	" No.	Request	No.	Bay	Bay	Initials
125085	Baker	23132	EXXONWACE	11318				3	<b></b>		5./
22/012	777	2044	Poly 6/xcol	118				4			CP
326008	TTS	965	Angiamel	118				5		 	JK
426015	TIS	754	GIYCOL	11				_5_			572
526013	TTS	707	rube oil	11128	·			3			5/
626014	Kichem Palk	2697	Geropon T-776	118				d	1		C/2
726011	Trimac	496735	SPILLE LOTEX	1118				5	1/10		
825921	9.6	69278	solvent	IT				4	///		(D)
926016	CFS	104	Oil venales	114				4			00
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_eadman		プレ							flush, HF - Hot I		
	the nearest half gallon.	· · · · · · · · · · · · · · · · · · ·		<del>i</del>	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Work Order No.	Customer Name	Uńit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
126035	11	17 107	NP9	8-11-	16			4			STA
2 200038	TTC	3392	alveol	8-11-11	b			3			150
326000	J-73	987	46	8-11-1	6			4			JL
426037	1-15	761	Lubeoil	8-11-16	<u> </u>			¥			Ju
526012	7-15	2563	Styelvenglypol	8-11				3'			JE
624011	Trynac	499-6375		9-11				5		n/c	38-41
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Leadman	Ameri	30	•			Cleaning I	Process Key:	CF - Cold	Flush, HF - Het	Flush, DI - Di	asel
Record all heels to	the nearest half gallon.			<del> </del>					rgent, P - Pres		
Work			Our does his ann a	D	Heel	Drum No.	Time	Bay No.	Time on	Time off	Cleaner's Initials
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	NO.	Request	<del></del>	Bay	Bay	Inidats
126075		256	Resin	11818		ļ. <del></del>	<del> </del>	3			5%
275981	ANdreus	5065	Rewash_	117/6		ļ	<del> </del>	4	0/1	<u> </u>	S
326011	Trimal.	49-6735	Sel, ut half	711188	<b></b>	ļ	<del> </del>		1/1/6		JK_
426019	CES N	36090	N/H Solids	118		<u> </u>		4			CP
5 2600 8	ITS	850	Ext wash	1115	<u> </u>	<u> </u>		3			5%
626027	ITS	6508	citic Acid	118		<b></b>	<b> </b>	7			CP
726028	Raker	688	EXI WOSh	1114	-	<u> </u>		3_			5/
8 26029	ITS	7002	Tevaitoi	118				4			JA
926020	O.C.	7337	N-Methys 2	11482	13			3			5
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Lead	man	Arnem	do	, <i>.</i>				Process Key: Steam, C - Cau				
Reco		the nearest half gallon.	•			Heel	Drum	Time	Bay	Time on	Time off	
- 1	Work Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1	26043	Petro	1318	61401	11.8				3			AR
2	775							<u> </u>	<u> </u>			
3	26044	T75	677	DC1-11	117	6			4			C.P.
4	26011	Trimac	419-6735	Serup hore	X11 18		·		5			52
	26048	KI Chem Pai	21661	wax	118			<u> </u>	3	NIC		VIZ
6	1605D	Tiderori	1077	JP-8	1184				4			CP
7	26050	Tidepon	1050	J P-8	1184				4			CP.
8			HEET	<b>7</b>	·		:					
9												
10		-					<u> </u>					
11	7.7 7.7 7.43											
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Date	6-8-0	9	•	·							·
Leadman	Arman	10	•				Process Key:				
Record all heels to	the nearest half gallon.			<del></del>	·			stic, D - Detergent, P - Pres			
Work	_	a since all	Product Name	Process	Heel	Drum No.	Time	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
Order No.	Customer Name	Unit#			(gallons)	140.	Request	,	- Day	Day	Initials
126053	lidePori	1049	JP-8	118 4		ļ	<del> </del>	4	<b></b>		C. Y.
226048	KI Chem Pat	21-666	wax	118		ļ	<u> </u>	3	<u> </u>		MR
326053	TEPPCO	946079	crude oil	1180				d			CP
426036	CES	2224	0085-2-601:	10 x 8 1				3			JR
526101	CES	252	VUISTA CON EL	118				3			AR
6	CES	100	Ext wash	11/4				3			HR
726100	Triner Plani	5050	Insneum	11.3				5	1_/		JR.
825 X5 6	Zomax	KTrainer	BURETS			:		4	1//	3	CP.
926105	105	222	Base oil	t18				3	, ,		57
10 26103	TTS	6301	viny Heelald	117				5			JR
1126049	Bulleve	1952	crude 0,7	118				3			57
1226107	TidePori	U HOSE	bube oil	168				5	NIC		JR
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Shift	-	Qr			•	<i>)</i>						)
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Lead			プレ		v.		Cleaning F	Process Key:	CF - Cold F	lush, HF - Hot	Flush, DI - Die	sel
		the nearest half gallon.						Stearn, C - Cau	stic, D - Deter	gent, P - Pres		rior
	Work				·	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1	26126	PetioEXP.	1206	Lube oil	8-11-1	}	<b></b>		4			57
2	2/0123	Hurt	109	Disel	8-11				5			3-11
3	26110	Tideport.	3007	TP-8	8-11				14			ST
4	26/22	CE3	205	Resin	9-11-6	6-18	<u> </u>		2		(	SP
5	26108	775	982	Spec Deid	8-11-	16			3			JE
6	26/24	ゴイく	6503	ProporicAcid	X-11				3			JE
7	26127	TTS	2043	914001	8-11-1	6			3			JE
8	21425	I75	2044	Amno Cub	8-11-1	6		ļ	U			JU
9	26120	ITS	965	Amnines	8-11				4			JU
10	25856	Romax	Strair		18				4		1/C	B-H
11	24129	I-75	ZA X 880	Polymer	41B				5		Alc	\$ B-1
12												
13			ļ									
14			<u> </u>					·				·
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22	1	<u> </u>	+									·
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te adman	Arman the nearest half gallon.	6			,				lush, HF - Hot gent, P - Presq		
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's
26129	TT	8880	POlymer	11818	D.			5			JR
26856	Romax	6 STr	ainer Resign	11818				w/			CP
126131	Inner Plan	5621	Delevaeni	113		<u> </u>		3'			AR
26134	Pelvo	[318	hube oil	113				5			JK
26111	175	4-722	TPA	117	N2.90			5			275
326135	Firebird	7-322	FuelsTock	119				-5		:	J.K
126137	CE3	270	waste warey	114				4			CP
826132	CES	RB 1207	N/HSOlids	168/6				3			HX
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GES lankwasn: TREPORT Shift 2043 Date Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel Leadman F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior Record all heels to the nearest half gallon. Time off Time Bay Time on Cleaner's Heei Drum Work **Customer Name** (gallons) No. Request No. Bay Initials **Product Name Process** Bay Unit# Order No. 2 12 - 8 6503 5/ 3 110 Sals 4 8-11 v wales 8-11 JE 409 W. Water 15 16 17 18 19 20 21 22 23

CES lankwash ' report

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Date			10-10-9			•		·-		<i>;</i>	<u> </u>	·
Lead			50							lush, HF - Hot		
Recon	d all heels to	the nearest half gallon.	·		<u> </u>					rgent, P - Preso		
1.	Work		Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
	Order No.	Customer Name		1	8-11-1	1,	140.	reducar	4	Law	}	137
15	46087	-1-15	7202	Ester	<del></del>		ļ	<u> </u>	1	<b> </b>	57.	<del>[</del> 블
20	76152	- Dart	6 5 FG		8-11		<u> </u>	<b>}</b>	3	ļ		UE
3	26117	CES	2565	class / S/Jege	8-11-	16	ļ		3			JE.
4	46079	ITS.	6509	spec Acid	8-11-1	6	<u> </u>		: 4.			52
5	26074	CES	600	Wasteshile	8-11.	16			4			57
6	26078	Team	402	choline	8-11				4			57-50
7 8	26149	ITS	6701	Bio Diesel	8-11-	16			3			JE
8	26080	J-75	2044	Bredefluid	871-		<u> </u>		4			プレ
9	26071	I-75	15-850	Bio Diesel	8-11-1	6			3			DE
10	26082	- CBS	VB-2507	class / Slugge	8-11-1	<b>6</b>			4			JL
11	26075	CES VI	2526	Class I siv dge	8-1/-	12			<u> </u>		NC	B-4
12					V 1			<b></b>	······································			
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Leadman	Arman	ido_							lush, HF - Het l		
	the nearest half gallon.			<del></del>					rgent, P - Preso		
Work		Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
Order No.	Customer Name	11	1	110000	(BERROTTO)	1-10-	Treducer	/	July		TO TO
196133	115	1266	fat Tx Alcohol	718,			<u> </u>	<del>                                     </del>	1		45
226112	_ CES	25-002	N/1+ 20119	12 8/6			<b> </b>	N			(CI)
326102	CE3	20-02	N/1+ 50/1/18	117/6		<del> </del>	<del> </del>	<u>ک</u>			5-6-
426/18	Innerflant	5666	Base of	1(8			· · · · · · · · · · · · · · · · · · ·	1		· · · · · · · · · · · · · · · · · · ·	Con
526145	Andreas	1251	Rewash	118		ļ		5			JK
626128	CES	25-009	C19552-Solls	11816		ļ		3,	ļ <del>.</del>		5 2
726106	CES	25/12	N/HSolids	21316	L8	<u> </u>		4	<u> </u>		CP
821934	Chem Pack	2596	PEG-1450	119		ļ		5			218
926076	CES	271	w/w	11.4			<u>.</u>	<u>3</u>			5/5
1026146	BUILEXP	30217	crude oil	118				5,			JK
1126147	Frybird	324	Lube oil	768				4			CP
12 26148	Tidegori	10/2	5P-8	1014				5	<b> </b>		77C)
13 26117	CFS	2565	Solids	1118				_3	N		ST
14										<u></u>	· .
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Date		5-30-9		•			··		<del></del>		*	
Leadman		プレー							lush, HF - Hot			ı
	the nearest half gallon.	, · · · · · · · · · · · · · · · · · · ·	r	<del>i</del>	l Heal				gent, P - Preso			
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials	
1258/63	Theoset	LT 971	Cd BUFF		7-11-8			4			CP-J	(
125941	Kisher.	6702	Polymer	8-11-18				4			2	
37-929	Weather Ford	Sn 10338-7	4	8-11-11	,			3			JE	
307592		BR 21399	Waste Solids	8-11-	16			5			S-T-1	٦ ؍
= 059.73	Z9015101 V	6701	Passivation	3-11-6	21	ļ	İ	5			C1-0	H
625 947	CES	234		8-11				4	<u> </u>		7/	
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Date		5-29-	09	•		•		<u> </u>	·	:		-
Leadn	nan	Arman	do	•						lush, HF - Het		
		the nearest half gallon.				· - 181 ·				rgent, P - Preso		
	Work		4 5 26 . dk	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
	rder No.	Customer Name	Unit#		riucess /	(Banona)	140.	vedaesi	2	1.9exy	Bay	1 Tillueis
1/2	5936	_CLS	256	waste water	114			<del> </del>	5	17/		# 15
22	5910	Baker	26444	crude oil	11178			<u> </u>	5	M.C		JK
3/2	5862	Tidepon	41-971	BUFFER	1118	· ·			4	NIC		CP
4 9	-924	Ti La POILI	497/	BUFEN	1118				3			57
5/2	5929	MOC	816	Base oil	118				3			3.7
6	7/3/											
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Date	5-28-6	09	•						<del></del>		· · · · · · · · · · · · · · · · · · ·
Leadman	Armendo	2	•						Flush, HF - Hot		
	the nearest half gallon.	<del>,</del>	<u>г</u>	<del></del>	111		7		rgent, P - Preso		
Work	O	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on	Time off Bay	Cleaner's Initials
Order No.	Customer Name		7		(Signoria)	1.0.	1 1104000	6	1///	Do _j	77
125910	Baker	26494	crude oil	11128		-	<del> </del>	1	11410		7/5
225871	Baker.	29235	crude oil	1.1128		<u> </u>	<b>-</b>	H			البراك
325621	CK6	TOTE		11816				3	<b></b>		57
425867	Firebird	318	Petrolum Di	:.118		<u> </u>		4	N/C		CR
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Date	<u> </u>	"-28-9	•						·	<del> </del>	
Leadman		<u> ブレ</u>	•				Process Key:				
	to the nearest half gallon.	T	<del></del>		Heel	Drum	Steam, C - Cau Time		Time on	Time off	
Work	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	Bay No.	Bay	Bay	Initials
Order No		205		9-11-16		a (5	1.04000	2			50
120776		005	Resin.		110	1	<del> </del>	7	<del> </del>		45-1
20-5934	1 Equistar 1	10x293 14	waste Soil	8-11-16		<del> </del>	<b></b>	5	<u> </u>		120
325925	Equistar V	DR31398	waste So 11	8-11-16		ļ					DC
425910	Baker 5	1264944	h (Nudeoil	8-11-12	-16	<u> </u>		5		NC	BH
525933	CES	20-1:	vaste vales	8-11		<u> </u>	<u> </u>	3			JE
62586	FIRBIYE	318	Petro dist	8-11				4			J
725922	Phonex	VT-1	Oily water	8-11-1	8 150	sa (3		4	·		JL
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Date Leadman JA	mes Pharm					Cleaning F	rocess Key:	CF - Cold F	iush, HF - Hot I	Flush, DI - Die	ısel
December of heels to	the nearest half gallon.			<u>.)                                     </u>		F/S - Flush/S	iteam, C - Cau	stic, D - Deter	gent, P - Preso	ive, Ex-Exte	rior
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
105761	CES	629	V/4 52/185	8-11-16				2			58
2 25914	CES.	233	where	8-11-14				5			TR
. —	CES	RB31250		12-18-11-1	6			5			TE
3 25870 4 22534	CKB	7.43	-19-	2-11				Carol .			38
	CKG	7065	-57	2-11				2			50.
5 225 15 6 25877	Emyo (Boles)	8mx23671	L carde	12-8-11						÷	
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Date	S	7-27-9			,				·		
Leadman		11-	•						Flush, HF - Hot		
	the nearest half gallon.				Heel	Drum	Time	Bay	rgent, P - Preso	Time off	
Work Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request		Bay	Bay	Initials
125872		1×23671C.	onte oil	8-11-12-1	10-18			4			JU
225864	Firebird.	354	Mix Organic	9-11				13			TE
372867	CES	205	nlit waste	#10-	10011	<b>†</b>		12	1		TP
303100	Petro	(0.8%	Keed Stock	8-11-1				3	1		F/E
4/25/9/15	CES	2-35	Acetate	7-11-1				5			PI
525916	C75	249	W water	8-11	<i></i>			5		;	57
625875	0.5	11	·0·watca	3.11							
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Date	5/24/19	·		· (	•	Cleaning 5	Process Kev	CF - Cold	Flush, HF - Het	Flush DI Di	esei
Leadman T	the nearest half gallon.	3		( )	4		-		rgent, P - Pres		
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
	<del></del>	1084	sovert 2	9-11			Tues	3	6101	Jes 1 00	57
125977	Tideart .	223	oly water	124-11-11	, 45	Rec	1 14/19	4	5:00	8:37	00
225903	CES		Zinge after In		, ,,,,			3	8:05	9:25	6.7
3 25860	Anders	1800			2	<del> </del>	<del> </del>	1	5100	1.03	57
4 258752	Balue	344471M	Civas el	124.11	35			5			JR
525958	Petro Exavs	17-1358	Lloe rij		<del>y</del>				9:30		20
625959	CES	243	WASte WATER	8-11	E.			4	8:45	11:30	CP
785872	BAKER	FMX 236	crude o.	12-8-11-19		<u> </u>		4	4/11:45	·	CP
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Leadm	nan		50	•		·		Process Key:				
		the nearest half gallon.		·	<u> </u>			Steam, C - Cau				
	Work rder No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
12	5870	Baker A	331250A	inder!	8-11-12				5	n/c	<b>2</b>	57
22	5906	Raker SI	126465	W/mass witer	8-4				3			125
37	872	Baker Fr	2023671	crizevil	8-11-12	78 3	5506		4		n/c	Ja
45	59130	053	211	W. Water	8-4-16		<u> </u>		3			リュ
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Date	5-22-0	9			·	Cleaning B	rooss Kow	CE Cold E	lush, HF - Het I	Elizab DI Dia	
Leadman	the nearest half gallon.	<del></del>			-				gent, P - Preso		
Work	Me itemest tian gallott.	· · · · · · · · · · · · · · · · · · ·			Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	"No.	Request	No.	Bay	Bay	Initials
125968	An drews	1884	Re wash	11716				3	1.1.		57
225952	Baker.	26497	crude oil	11128				5	WIC		22
325974	Dynamic	FT506	Sand war	118		<u> </u>		4	1, 0		CP
415972	CES	222	Black Oil	21818	100	10% /	1/0	3		AR	57
5	CKC	Tote		11810	V	<u> </u>		4	NIC		CP
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Shift Date Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel Leadman F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior Record all heels to the nearest half gallon. Time off Cleaner's Heel Time Bay Time on Drum Work Request Initials **Product Name** (gallons) No. No. Bay Bay Unit# **Process Customer Name** Order No. 109 11 12 13 14 15 16 17 18 19 20 21 22 23

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Date	5-21-0	9	•	,			<u> </u>	· · · · · · · · · · · · · · · · · · ·	<del> </del>		·
Leadman	Annasc	lo	•						lush, HF - Het l		
	the nearest half gallon.		<u> </u>	<del>ii</del> -	T			<del></del>	rgent, P - Preso		
Work		Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
Order No.	Customer Name			1	(ganore)	1-1-1-	Troqueou		Lowy	Bay	
125627	a.C.	76461	SOLUP	11818	16	<del> </del>	<del> </del> -	3	<del> </del>		1/2/20
275904	CES	254	Baseoil	118		+	<b>_</b>	5	1 1/2	l	2/2
325952	Baker	26497	crude oil	1181	12	<b> </b>		5	11/6		515
425965	Tidepon	1050	Flam Liquid	1184		<u> </u>		4	<u> </u>		CH
5 25967	Tidepari	1051	Flam Di quio	21807				d			كؤي
625966	CES	416	waste wast	1118				13_			57
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Date	5-19-	09				Classini 5	Propose Vov	CE Calab	Flush, HF - Het	Elizab DI Di	
Leadman	princine	10	•						riusii, tir - nei irgent, P - Presi		
	the nearest half gallon.	<u> </u>			Heel	Drum	Time	Bay	Time on	Time off	
Work Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Вау	Initials
125897	CES	243	waste water	114			ļ	14			CP.
225896	Leels	2185	Resin	1.68		<u> </u>		5	<del> </del>	<del> </del>	D.K.
325892	Balser	31235	D Sode-Ash	118		<b> </b>		4			CP
425894	Baker	3252	soda Ash	118		<b></b>	<b> </b>	5	<del> </del>		J.K.
525850	SPeedy_	30	Polymer	11818	·		ļ	3	<del> </del>		5 7
625898	Baker I	14040	sul Func Acid	118			<b> </b> -	5,	11/1		12.15
725901	Bullzeye	679	crude of	118		<del> </del>	<b></b>	4	Will		CP.
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Shift Date Cleaning Process Key: CF - Cold Flush, HF - Het Flush, DI - Diesel Leadman F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior Record all heels to the nearest half gallon. Time off Cleaner's Time Bay Time on Heel Drum Work (gallons) Request Bay Initials Unit# **Product Name Process** " No. No. Bay **Customer Name** Order No. 150.580 8-11: 75963 Dynamic 50 U aU. 4 250 11 12 13 14 15 16 17 18 19 20 21 22 23

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Lead			-91	•			Cleaning F	Process Key	CF - Cold I	Flush, HF - Hol	Flush, DI - Di	esel
Recol	d all heels to	the nearest half gallon.					F/S - Flush/	Steam, C - Cau	istic, D - Dete	rgent, P - Pres	olve, Ex-Exte	rior
T	Work		t line dh	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner Initials
	Order No.	Customer Name	Unit#					request	7	Lady	Day	Time is
1	75848	CRS	241		9-11 -	110 Sa	<b>P</b>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	UB
2	25969	Refro	1028	Dieweland year	8-11		<u> </u>	ļ	14	<u> </u>		02
3	2597	A One	210	Tole sale								JP
4	25971	Witrans	102	Trans Fly	8-11	<del></del>			3			DE
5	25952	Baker S	126197	crideoil	12-11		<u> </u>		5	<u> </u>	ne	5
6		Dunam ic	T 506	Oil	8-11				4		NE	3
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Da		5-18-0	9	_	•			· .		·		-
Le	ndman	Arman	No	•						Flush, HF - Hot		
Rec		the nearest half gallon.	<del>,</del>	1	<del>i</del>					rgent, P - Preso		
	Work	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
	Order No.		<u> </u>		118	19-10-107		, roquee,			Day	777
1	25859	Global	9654	oil y water	1.0		<del> </del>	<del> </del>	7			2
_2	25890	Global	1381	OI X Water	11 0			-	1			C.
: 3	25858	Colobal	1380	oily water	11.8				5	1-1-1-		515
4	25891	Pulido	3002	crude Dil	118				3	NIC		SHR
5		( E G	1010		11816				4-	5	JR	CP
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Date Leadman	Also appeared half galley	7					Process Key: Steam, C - Cau				
Work Order No.	the nearest half gallon.  Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	
125849	MPC	4000	crudeoil	8-11				4			JE
225857	Texasoil	3169	crudeoil	8-11				5			25
3	CKG	Totas	5 Flam.1.	811.	16			3			プピ
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Leadma	an		7L	•			Cleaning I	Process Key	CF - Cold F	lush, HF - Het	Flush, DI - Die	sel
		the nearest half gallon.			<u> </u>		F/S - Flush/	Steam, C - Cau	ıstic, D - Deter	gent, P - Preso	ive, Ex-Exte	rior
V	Nork der No.	Customer Name	Uńit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
125	855	team	765	grease	8-11				2	थ		JU
205	854	team.	402	grease	8-11				3			TE
305	849	m.PC	60 62	audeoil	8-11				4		N/C.	JE
405	T847	Pineville	-100 MT-4	NH liquid	9-11-16				.3			JE
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Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

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Date

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Date	5-14-0	29	•								
Leadman	Annan	10				Cleaning I	Process Key:	CF - Cold	Flush, HF - Hot	Flush, DI - Die	sel
Record all hes	is to the nearest half gallon.		<u>,</u>	<del> </del>	·				rgent, P - Preso		
Work Order f		Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
12582	4 Andrews	1779	Perush	11.7				5			5.R
2 25 8 8	7.CE3	105	Ext wash	7114			ļ	3			A-R'
32588	6 CES	2003	Ext wash	1111				4			00
42588	8 DAY	2 TOTE	Carbon	119		·		3	ļ		17-12
5	QoC	67682		118				5	1.//	A//C	1
6	CEJ	TOTE		1186					1/6		CP
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Shiff		2	-14-9	•				-	. •			
	dman		71		,		Cleaning F	Process Key:	CF - Cold F	lush, HF - Het	Flush, DI - Die	sel
		the nearest half gallon.			<u> </u>					rgent, P - Presq		
	Work					Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1	25889	Globa	BTT-2	1/4 Studge	8-11				4			CR
2	25844	OES	271	Class Slude	8-41			<u> </u>	3,			UB
3	25843	CITS	22	Blacker	8-11-	14			4			CR
4	_	CES	242	Dains	18				Ч		ее	CR
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Shift Date Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel Leadman F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior Record all heels to the nearest half gallon. Time off Cleaner's Heel Drum Time Bay Time on Work Initials **Product Name** (gallons) No. Request No. Bay Bay Unit# **Process Customer Name** Order No. 10 11 12 13 14 15 16 17 18 19 20 21 22 23

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Date	5-12-0	5 9	:						<del> </del>		-
Leadman			•						Flush, HF - Hot		
	the nearest half gallon.	·	<u> </u>	<del> </del>					rgent, P - Pres		
Work Order No.	Customer Name	Unit#_	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
125379		2585	Slucry Di	1118		:		10			CP
225378	Tidepon	4-971	Py Par &	(1812			<u> </u>	15			JR
325772	Jan CES	254	C-61	11128	18 3-	Drum	\$	3			A X
425774	Lee's	965	Jall Of	118				5			- X
5 25 827	lideron	T=547	Solvant	118				5		<u>.</u>	28
615773	Chemyac	161	(C) a X	(-5				1-7-			CF
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Date	•		2-12-9					·		·	<u> </u>	-
Leadn			<u> </u>	•						Flush, HF - Het		
Record	all heels to	the nearest half gallon.	,		<u> </u>	·				rgent, P - Pres		
	Work	O salama Nama	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
- 10	rder No.	Customer Name	Orit #	Olywarler	8-11	[ganores]	140.	Reguest	1 7	Long	Bay	11111013
10	2880	proents	4-1-1	1		<del></del>	ļ. <del></del>		13	-		126
22	5879	CB3	3058	MILSOLIDS	<u> </u>	b	ļ	ļ	3	-		JE
3/2	5871	NUIZEYE	412	crudeoil	8-11		ļ		5		ne	CR
42	-5881	Tideport	t050	Jet Fuel	8-11				5	<u>                                     </u>		CR
52	5878	Tideport	1051	Hovensa	8-11				S			CR
67	7829	Tidelort	T-639	Retar-R	18-11				3_			JE
76	\$ 250%	2 (FS	229	remosite iqui	18-4				3:			Jes
8		CES	280	Ext only	14				2/			SC
9	<u>.</u>	· ·									·	
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Date 5/11-09												<u> </u>
Leadman Amendo				•		Cleaning Process Key: CF - Cold Flush, HF - Het Flush, DI - Diesel F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior						
Reco		the nearest half gallon.	· · · · · · · · · · · · · · · · · · ·			Heel	Drum	Time	Bay	Time on	Time off	
	Work Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1	25802	Inne-Plane	60114	sufferziond oi	Exc 118				5		·	5%
2		CES.	2002	EXI WUSh	1114				3	<u> </u>		AK
3	75803	CES	410	Base oil	168				3			AZ
4	25800	Lepis	7285	Flydu Frothe	118				3	<u>                                     </u>		25
5	25801	Lees	1175	Pacty ACIE	118				3,	111	•	5 1
6	25838	FLX	63007-6	60/	1118/2	8			H	MC		CP
. 7	25809	CES	234	6-61	111218	8 1	Drum		5			275,
8							:					
9		<u>:</u>			<u> </u>			· · · · · · · · · · · · · · · · · · ·	· .			
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7nl 75-11-10 a Shift Date Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel Leadman F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior Record all heels to the nearest half gallon. Time off Heel Drum Time Bay Time on Cleaner's Work (gallons) No. Request Bay Initials Unit# **Product Name** Process | No. Bay Order No. **Customer Name** ATV630007-6 4 7 -3 phoenix 5 097 809 12 13 14 15 16 17 18 19 20 21 22 23

			CES	1 031VAA 4911	At Wehr	/I'L					
Shift			· •								
Date	5-9-	<u>-09</u>	· •			( <del></del>	· · · · · · · · · · · · · · · · · · ·	<del></del>	<u>.                                    </u>		· · · · · · · · · · · · · · · · · · ·
Leadman	Armo	udo	•				-		Flush, HF - Hot		
	the nearest half gallon.	<del></del>	T	·	<u> </u>				rgent, P - Preso		
Work	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	ι ime οπ Bay	Cleaner's Initials
Order No.	Customer Name	284			(genone)	140.	Nequest	110.	Gay	Day	N-D
1		289	Exi wash	1119				2	-	<u> </u>	H.S.
225791	CFS	270	Oil y water	11800	<b>.</b>	ļ	<del> </del>	3_	<del></del>		W 16
325990	OES	139	melliano1	118				5	<u> </u>		JK
4	Flox	63007	Terro FIX	16818				1	NI		CP
5	C = 5	270	6x7 (12/12)	11/16				5			27
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Dáte	2-	-8-9	. •	•	,		٠.				
Leadman		-72-							lush, HF - Het		
Record all heels to	the nearest half gallon.	,		<del> </del>					gent, P - Preso		
Work	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
Order No.	Enviro	102	Flan- Lauid	8-11	18/1	05°C/1		5	,		CK
05794	Phoenix	27/000	DINCLIES	8-11-1	<del>                                     </del>	1	<del></del>	रि			DE
275 117	Flex	63001-6	Two fla	18	- 10			4		No	10
3	1 les	2000	Ed only	14				5			
4 =	CIES -	292	extenly	14				5	·		4,
-5	7125	291	Extonly	14				38			725
6		270	Extonhe	14				.7			775
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Lea	dman	Aman	<i>b</i>	•						Flush, HF - Het rgent, P - Pres		
Reco	wid all heels to Work	the nearest half gallon.	<u> </u>			Heel	Drum	Time	Bay	Time on	Time off	
	<b>Order No.</b>	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1	/	CF5	255277	N/H while	1186				5			JK
2	15791	26 FZ	104	water oil	11816				3			AR
3	25792	CES	646	Exi wash	1116				4			CP
4	25790	CEC	259	Brackail	11816	<u> </u>			5			SK
5	25798	CES	290	ExTwash	1114				_3			78
6	25796	CES	287	Ext cosh	1116				4	ļ		CY
7	25795	- CES	298	Ex wash	11.14				3'			A2
8	27602	Pha enix	276038	oil x Slads	11816				5			22
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10	r Star Sala											
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Leadman	America	do	. ·						Flush, HF - Hot		
Record all he	els to the nearest half gallon.	<del></del>		<del></del>				7	rgent, P - Preso		
Wo		11444	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
Order	No. Customer Name	Unit#			(gonores)	110.	Lichardi	3	- Buy		77
1257	79 CES	100	Extrash	1116	<del> </del>	<del> </del>	<del> </del>	<del>                                     </del>			150
2 257	82 CES	282	EXI Wash	11.14,			<del> </del>	3			AK.
3257	81 CF3	108	EXI WASH	1114	<del> </del>	<u> </u>		3,	1.11	· · ·	175
4158	33 / ES	1012		11816			1	1	1A1/ C		CP
5757	VE CES	264	was Te was	118				5	N/C		CH
6/15-	XY /ES	105	W-Sludg	0119				3_			AR
7257	83 ENBhick	6707	BIOKK Zinc	1176	6			3_			AR
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<del></del>	edman		JL 9	•			Cleaning I	rocess Key	CF - Cold F	lush, HF - Het	Flush, DI - Die	sel
		the nearest half gallon.			<u> </u>	·		Steam, C - Cau				
	Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cteaner's Initials
	25 785	CES	264	W- Water	8-11-1	6			5			07
	25720	o CES	247	Red Resin	9-11				3			了戶
<u>ک</u> تو	25787	Phoenix	07-1	Dily Warter	8-11				2		-	JC
	20784	CFS	409	Waste Stage	8-11				5			52
	25788	CES	210	w-water	8-//				5			JL
_ <u>-</u> -		0135	640	Fol-Only	14-1	/			4		1/c	CR
. 7	2	SUNCOGET	3	Oily Slu dge	8-11-18	2 drum	5		3			-CR
8		CES	BackH	of Estanl	14				3			CR
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Dal		5 ubve	59	•	,		<del></del>			·		
Lea	dman	Amen	10	•						Flush, HF - Het		
Rec		the nearest half gallon.			<del></del>	<del> </del>				rgent, P - Preso		
	Work	· · · · · · · · · · · · · · · · · · ·	الله الشخوا ا	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
	Order No.	Customer Name	Unit#	7 6 2	· · · · · · · · · · · · · · · · · · ·	(BellOite)	140.	Liedacai		Lacy	, Day	il ilidata
1	15776	Thelon	3006	so vent	1184		<del> </del>	<del> </del>	3			0%
2	22361	GKG.	Tore		116 816			<b></b>	9			CP
. 3	12281	GRG	Trie		1186		<u>.</u>		5			22
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Da	ite adman		01				Cleaning F	rocess Key	CF - Cold F	lush, HF - Hot	Flush, DI - Die	sel
Re	aurriali heels to	the nearest half gallon.		·			F/S - Flush/S	Steam, C - Cau	ıstic, D - Dete	rgent, P - Presc		rior
	Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
	25717	CES	233	Flam- Lavid	7-11				1.7			Je
	25834	Twoole B	1	1565	811				4			CR
	25728	Cts/Pineux	10 02	Total poly	tank	811	1.		3			SE
	1	CKG	To	les Flam	8-1	<u>/</u>			3			72
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eaning Process Key: - Flush/Steam, C - Cau Drum Time No. Request	stic, D - Deter Bay			
- Flush/Steam, C - Caus Drum Time	stic, D - Deter Bay	gent, P - Presc		
- Flush/Steam, C - Caus Drum Time	stic, D - Deter Bay	gent, P - Presc		
Drum Time	Bay		NAG' EX - EXIGI	
			Time off	Cleaner's
1	No.	Bay	Bay	Initials
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Leadma	n	Annes	ado	•				racess Key:				
		the nearest half gallon.			ı ————	Heel		Steam, C - Cau Time				
	lork er No.	Customer Name	Unit#	Product Name	Process	(gallons)	Drum No.	Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
Old	el INO.		595	crude 2:1	4	15						70
1/25	812	Builte Ex	340	N/11 cracks	110				7	1		
2/3	769	100		11/11/11/01	11/3 D		1	<b></b>	<u> ک</u>			R4
325	818	Pan		Talow	11816				2	<del>                                     </del>		2
4		6/56	Tole	2 2 2 2	1186		<u> </u>		4			
5 25	819	high	25	Pine oil	1/8				5	0/1		1
625	820	Bullexe	6)4	Crude oil	<del>/</del>				_5	11/6		2
725	823	Global B	11-2	colslewater	11 8				4			CP
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Date		5-V-0,	9	•			Classic F	Inneres Mari	OF Calai	lush, HF - Het	Charle DI Di	
Lead	lman	the nearest half gallon.	<del></del>							rgent, P - Presc		
Recor	Work	Ric Hesical Heri Sanour	<u> </u>		1	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
16	25770	Tideron	3006	Fuel oil	1184	· · · · · · · · · · · · · · · · · · ·			5			JK
2 5	25760	DanA	690	sube oil	1118			ļ	3		B	51
3	5806	Threvelani	8181	CIVCOL	118		<u> </u>		5			JIK.
4	25807	TunerPlant	3106	614601	118				5	1		JK
5	25759	Andrus	1723	Rewash	118				5	NIC		JX
6/2	5809	Three Plans	1145	Dibuty 1 Hydros	cn 118				4			CP
7	· ·	( kG	TOTE		11876				4			c P
8	15764	PSC	340 N	Hwaste was	1118				3_	WC	B.	51
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Date Leadman		3-9-1	-			Cleaning	Process Key:	CF - Cold F	lush, HF - Hot	Flush, DI - Die	sel
	to the nearest half gallon.		_	· · · · · · · · · · · · · · · · · · ·	·	F/S - Flush/	Steam, C - Cau	stic, D - Dete	rgent, P - Preso	Ive, Ex-Exte	rior
Work Order No.		Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
125810	Tideport	T-639	Sastman. R	8-11				5	\$		ゴレニ
22581	1 Tideport	1648	E Solvent	8-11				4			20
327812	Hord	£8042	Lube 011	8-11	<u> </u>	<u></u>					TI
428754	Andrews	1723	Rinse AFterIns	8-11-	16			5			57
525816	CCS	235	W. water	8-11				5			CR
625817	CE5	243	Red Rosin	<b>89</b> 9	-1/ 110	gals		4			サレ
725808	CES	3057	waste solids	8-11-1	6			5			CR
825764	PSC	340	W. Serter	18				3		1/c	JE
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eadman	No assessment bull sollow		•		٠		iteam, C - Cau					1
Work	the nearest half gallon.	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's	s .
Order No. 1 25760	Customer Name Dane	490	BUFF	18	(Senons)	140.	Iredaesi	13	Loay	nh	T/S-	-12
100 160	CTE	206	Nastantila	011		1		4/	1	1	-	71
2 25 16	965	298		14	· ·		<b>†</b>	U			CH	-
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Le	adman		KL				Cleaning P	rocess Key:	CF - Cold Flo	ush, HF - Hot I	lush, DI - Die	sel
Red		the nearest half gallon.	<u> </u>				F/S - Flush/S	team, C - Caus	stic, D - Deterg	jent, P - Preso		
	Work				_	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1	05 165	MPC	630	Crude oil	8-11			ļ	4	<u> </u>		CH
2	25/60	Boker	bF123367	01/1	8-11-14	2			5			JL
3	257157	Andrews	81723	was	8-11				્ડ્ર			JE
_4	25768	CES	227	Solver Dranic	8-M	-16			ζŽ			JE
5	257104	PSC	340	WMH Whorse	871				ગ		alc	12
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Record		the nearest half gallon.	T	Т	r					gent, P - Preso	Time off	
	Work Irder No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Bay	Initials
12	5740	Andrews	1256	Le wash	11816				U			CP
22	5753	Nollex	234	warer organi	-118	·	-		5			52
32	5748	Sludge	Pump	Sindere	118				5	MIC		ゴガ
42	5754	CE5	271	hube pil	118				3			AR
5 9	5756	Chem Pak	2798	wax	118				5	NC		5 R
6 7	5755	Perro	372	Detergeni	118				_3	, ,		AR
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	ls to the nearest half gallon.			<del></del>			team, C - Caus				
Work Order N		11-44	Due donat Manage		Heel	Drum	Time	Bay	Time on	Time off	1
		Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
12575		732	3 Hoses	8-11				<del></del>			20
2 2575	6 Chempack	2798	Way	8/1				5			20
3 2572	4 CES V	5 25115	Naste Stude	8-11-16	-18 50	00 Sas		3			JE
42572	7 CES V	1 25224	wasteslude	8-11-13	·	bo sals		4		nlc	CH.
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Leadman	to Alex manuscate levels and another	一つし	-			1	rocess Key:				i i
Work	to the nearest half gallon.	1	T	T	Heel		team, C - Caus		Time on	Time off	
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	Drum No.	Time Request	Bay No.	Bay	Bay	Initials
125760	CES		fesin	9-11-16			1.04000	. 3	,		JE
225751	Darl	Total	Cerbon	8-11-10				5			JZ
325751	part	Tote 1	carbon	8-11-1				5			J2
425750	Baker s	126576	crudesil	8-11-12				_5_			JZ-CH
525748	Sledge pump	pomp	Strade	8-11-1	b			3		nla	PE
6 85 763	Tideport	3020	Eastman S.	8-11				4			CH
7	CB '	298	201-	14				il			ZH
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Leadman		1				Cleaning P	rocess Key:	CF - Cold FI	ush, HF - Hot l	Flush, DI - Die	sel
Record all heels to	the nearest half gallon.					F/S - Flush/S	team, C - Caus	stic, D - Deter	gent, P - Preso		ior
Work				<u> </u>	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit #	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
125746	CES	222	Base oil	118				3			22
225726	Andrews	1155	Rewash	117				3		/	410
325748	Slugge	Pamp	Studge	118				5,	X	10	56
4	CKO	TOTE	<u> </u>	118				Н	N/C	J /	P
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Record all heels to	the nearest half gallon.						-		gent, P - Preso		
Work	_				Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
125738	CES	CO37865		8-11-16	·			5			DL
2 25733	JAM	317	@plubeoil	8-11-12	)—			N		,	プモ
3 25736	CF5	CO 07065		8-4-16				<del>20</del>			*
425734	CPS	C007855		8-11-16				<del>8</del> 3			55
525741	CES	007941		8-11-4				.3			Jz=
625736	CBS	256	crude oil	8-11-1	2			3			ST
7	CES	Totes:	3	8-11-16				Н			CH
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Record all heels Work	to the nearest half gallon.	<del></del>	Т	т	111				gent, P - Preso	lve, Ex - Exter	
Order No	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Bay	Initials
125373	CES	256	wasTervares	118				d			A.B
2 25605	CES	254	Wax	11818				5			JZ
3 2549	Andrews		Rewash	117/6				4	ļ		CP
425723	TidePort	2005	JP-8	1184				5			2,12
525329	Baker	29782	ASPhatt	11128				3	ļ		57
622277	6/56	17	Tole	48				4-5		ادا	CP
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Leadman	the nearest half gallon.	0	-				rocess Key: team, C - Caus				
Work	the hearest hair gallon.	<del>,</del>	T		Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
125.37/	TidePon	1075	Diesel	1184	Rele	<del>                                     </del>		4			CP
225377	TidePort	1056	piesei	1184		· · · · · · · · · · · · · · · · · · ·		3		,	578
325539		2509	sindge	17 8 16				el.			OP
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	adman		ゴ	<del>.</del>			Cleaning P	rocess Key:	CF - Cold FI	ush, HF - Hot	Flush, DI - Die	sel
Rec		the nearest half gallon.		•	<del></del>	<del>,</del>	F/S - Flush/S	team, C - Caus	tic, D - Deterg			
:	Work	0	11.4.0	5		Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
	Order No.	Customer Name	529278	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1	05331F	Baker N		Asphalt	8-11-12	-66				!		JE
_2	P3310	Aideport	1075	Disel	8-11				4_			2
3	23579	Day	242	Corbon	8-11						1	JE
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	the nearest half gallon.	T	,	<del></del>		<del></del>			gent, P - Preso		
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
125617		154	Blackoil	8-1/-12		140.	request	3	l Bay	Day	JE
225614	- 0 - 0		1	8-11				<u>U</u>	<del> </del>	<u></u>	त्र,
	Texas oil	9726	Flamliquid	<del>                                     </del>				24	<del> </del>	 	<del></del>
3 25 616	-texasoil	1077	Flans / rovid	8-11						' <u></u>	= 4
42501	Phoenix	VT-1	Orynder	8-11				5			ブレーブ
5	CES	440	ext. only	15				5			77
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	the nearest half gallon.			<del>,</del>			<del></del>		jent, P - Preso		
Work Order No.	Customer Name	11-4-4	Deschool None	D	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's Initials
	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	miliais
125685	<u> </u>	256	hube oil	11178	<del></del>	<u> </u>		6			120
225610	CES		culiste cuater	118				7	1	<b></b>	CP
3	CE3	23581	77	1118				3	NIC		51
425612	(ES	410	waste winer	118				3	r		JP.
5	CE3	327	Exi ceash	118				5			JX
625613	CES	271	rube oil	168				5			272
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Shift Date 4-23-09 Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel Leadman F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior Record all heels to the nearest half gallon. Work Heel Drum Time Bay Time on Time off Cleaner's Order No. **Customer Name** Initials **Process** (gallons) Bay Bay Unit# **Product Name** No. Request No. 3 10 11 12 13 14 15 16 17 18 19 20 21 22 23

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Date		1-23-9	-								
Leadman		Th					rocess Key:				<b>I</b>
	the nearest half gallon.	γ	<del></del>	J	<del></del>		team, C - Caus				
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
125507	CFS.	624	de Warte Sludse	8-11-16		140.	request	2	Day	Day	RLI
20222	0175	270		8-11				3			JE
225(72	(175	259	Ham liquid	8-11				4			00
105521	CT 5	271	· · · · · · · · · · · · · · · · · · ·	8-11				(7			-P,-
575529	Baker	RB29788			12-16			4			
625525		631371A		8-11-12.		<del></del>		5			7/
72-499	Inner plant		Polyetner	8:11	14			7			70
82516	CES Plant	256	waste valer	8-4				4			2
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Date		09	-								
	~WS /		- /	[2]			_		lush, HF - Hot I		
	the nearest half gallon.	<del></del>		~ \ _	<del></del>	<del></del>	1		gent, P - Preso		
Work Order No.	Customer Name	Unit#	Dundwat Name	D	Heel	Drum No.	Time	Bay	Time on	Time off Bay	Cleaner's Initials
		<del>                                     </del>	Product Name	Process	(gallons)	NO.	Request	No.	Bay	Day	<del>                                     </del>
125680	CES	<del>23</del> 1	waste water	T							JE
235770	Phonex	VT-1	0. Ly WATER	8-11				•			MC
3 256 73	CF5	270	Light Endes	8-11		<u> </u>					JP
4 25719	Pulla Fue	674	crude oil	8-11		<u> </u>	<u> </u>	4.			ne
5 25679	LEE'S	2285	Detergant	8-11				3			JE
625718	Tileport -	@e 3014-	Detro Dist	8-11		_		U			ma
7 25681	CES	104	ole water	8-11		_	<b>,</b>	`			30
8 25 683	-CES	256	Loca oil Add.	18-11				a	tora	of	
925687	CES	209	water	7-11				4	,		JR
10	TO CES	Totos	w/H wist	8-11	· · · · · · · · · · · · · · · · · · ·			3			JE"
11 25 124	CES	8177	oily wer	8-1				3			TE
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Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

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	5	25747	Team	TO NOS	102	GREE	8-11	_		_	5	N/	<b>C</b>	JR
	_6	25675	Chain	Pak	2748	WAY	8-11-18	2- promos	e/p		4			CP
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Record all heels to the nearest half gallon.

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Leadman Tames

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**Customer Name** 

Tideport

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Unit#

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**Product Name** 

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Shift Date Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, Di - Diesel Leadman Record all heels to the nearest half gallon. F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior Work Heel Time on Time off Cleaner's Bay Drum Time Order No. Bay Initials **Customer Name** Unit# **Product Name** Process (gallons) No. Request No. Bay RB31512RT U Baker w 8 totes \$ 3 8 to-les 8-11-60 <u>,11</u> 12 13 14 15 16 17 18 19 20 21 _22 23

CES Tankwash Shift Report													
Shift					r								
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Leadman Skink				. ((			_	-		ush, HF - Hot Flush, DI - Diesel			
Record all heels to the nearest half gallon.					<u></u>			team, C - Caus					
	Work			_	_	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's	
	der No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials)	
1 35	le54	Tide goit	10lele	丁榜	08-11				324	715	<u>.</u>	JP/CP	
2 35	631	CES:	641	Pewtank mithy	17-811-10				2'			TP	
322	231	CKG (33)	Total						5			JR	
4 35	670	CES	410	Basil oil	8-11	~	_		4		!	CP	
5 45	W	CES	271	271	8-11		=	<i></i>	5			JR	
6 4	1407	CES	647	1	8-11-16				3			5P	
7 25		DANA	599	SET -UP	19-18-114	1-/3 8	Transfer		4			CP/mc	
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Date		1/	-18-9	-								
Leadma			-101	-			Cleaning P	rocess Key:	CE - Cold FI	ush HE - Hot I	lush DI - Die	sel
		the nearest half gallon.	<u> </u>	-			1	team, C - Caus				
	Vork					Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Ord	ler No.	Customer Name	Unit #	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
125	1666	RUP	23900	Diselfiel	8-11-16	2-16		·	4		-	me
225	714	LEES	1165	Bio Diesel	8-11				3			JE
3 25	713	Tideport	1055	Solven R	8-11				4			Thre
425	7/1	Tideport	7-639	Alcycate	8-11	Reund			4			me
5 25	713	TIZEPOH		ambost.blelig	28-11				3			JE.
6 25	710	tideport	1048	Solven R	8-11				3			JE
7 —		CES	228	N. Water	8-11-	-14			5			ゴン
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		1	CES	Tankwash	Shift Repo	rt					
Shift	<u> </u>	<u> </u>	_								
Date	H	-17-9	_								
Leadman		<b></b> 万し	_	•		Cleaning P	rocess Key:	CF - Cold FI	ush, HF - Hot I	Flush, DI - Die	sel
	o the nearest half gallon.			···-		F/S - Flush/S	team, C - Caus				
Work					Heel	Drum	Time	Bay	Time on	Time off	
Order No.		Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
125665	Iteam_	402	cholinectorise	8-11				84			mc
2 25668	Liquid	6005	Kerosine	8-11				S			72
3256H		276530	water	8-11-1				3			JE
425667	Petro	1206	YuBase oil	8-11-1	2			3			JE
595663	RUR	279108	Water	8-11-1	6			H			m
625666	RYR	239032	Disel Fuel	8-11-12	-150			15 H		nle	me
7	CES	235	Reclean	7-11				3			36
8											
9										<u>.</u>	
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Date		ES 4-16-	9									
Leadman		5.	. 1			Cleaning P	rocess Key:	CF - Cold FI	ush, HF - Hot I	-lush, DI - Die	sel	
Record all heels to	the nearest half gallon.						F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Ext					
Work					Heel	Drum	Time	Bay	Time on	Time off	Cleaner's	
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials	
125704	Hurt	£8042	Depron	8-11				5			72	
275706	Hurt.	16574	Gasoline	8-11				4			Mc	
375708	Hurt	L 938	Mesel	811				4			mc	
425707	Petro	372	GE-011	8-11				3			JE	
525653	Dart	42-FG	carbon	8-111				3			JE	
625 655	CES	264	Oily water	8-11				4	:		mc	
725656	CES	256	0	8-11				5			ユ	
8 25657	CES	209	methano	1 7-1	/			3			J6	
9 —	CES	205	w. Watel	7-11				Ŋ			JE	
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Shift											
Date	<u>- 49-16-0</u>	9,				Ol : D		05 0 115		-1 1 21 21	<del></del>
Leadman	the nearest half gallon.	¥0	•	Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, Di - Diesel F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior							
Work	the hearest han gallon.	1			Heel	Drum	Time	Bay	Time on	Time off	
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
125694	CE3	233	waste water	1118				5			5R
2 25 701	Pervo	1206	Brake Fluo	118				5			52
3 25 697	RFR	254988	Rust were	1158				3			AR
425702	Leels	985	Fairy Acid	118				5			JR
5 25 6 57	CES	filTer	oil	118				3			TR
625703	CE3	104	wasteware	118				3		_	AP
725511	Dana	599	Seoul JAJ	1118				4	NIC		المرح
8	· · · · · · · · · · · · · · · · · · ·	•									
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Shift											
Date	4-15-09		•			<u></u>					
Leadman	Armande	<u> </u>							ush, HF - Hot F		
Record all heels to	the nearest half gallon.								gent, P - Preso		
Work					Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
125609	Tidepon	1048	Solveni	4184				3			SI
225603	Baker	40575	Pre Rinsd	118				5		·	JX
325691	CES	416	Base oil	118				5	1 1		72
4 25690	CE3	213	Base oil	118				3	N/C		57
525511	Dana	599	scrup Tal	11/8				И	NCC		CP
6 25 693	C E3	234	methonol	118				5		· · · · · · · · · · · · · · · · · · ·	JR_
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		- \	CES	Tankwash	Shift Repo	rt					
Shift		Ju9		•							
Date 🥒		4-15-9						<del>v </del>			
Leadman	, 	ゴレ				_			lush, HF - Hot I		I.
	the nearest half gallon.	T							gent, P - Preso		
Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
12-5/92	/)	254204	Warne	8-11	(ganons)	110.	ricquest	4	Day	Day	M
205592		V245B	sewage	8-11-18	150	504		7			7
2 2000	Burel.	100 100	Journ Je	2 11 19	1,70			_ <u>U</u>			00
125695	Baker S	1124072	Hydrowater	8-11				Ц			mc
5256910	I.F.F.S	1174	Fathereid	8-11				5		<u> </u>	netor
627190	(55)	213	Rascoil	8-11-1				3.		2.1	TE
725694	CES	271	w-water	8-11-	1Co			5			17
82569	CES	270	base oil		(2			.5			5
925700		243	Red Resin	9-11.	110 99	15		3			Te
10			700 3011								
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Shift	2	nd	OLO	i alikwasii ,	owiir Mobo	••					•
Date		# U-14-9	7								
Leadman		17	•			Cleaning P	rocess Key:	CF - Cold FI	lush, HF - Hot F	lush, DI - Die	sel
Record all heels to	the nearest half gallon.	70					team, C - Caus				
Work					Heel	Drum	Time	Bay	Time on	Time off	
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1/5/644	CES	8177	Emply Cleur	84/10	)			3			SE
225604	C83	413	methanol	7-11-11				3		*	TE
375549	GI	_	011	9-11-12	-18-405	<b>E</b> S		3			176
425511	Dang	599	TOI	18				7-1		nk	ma
5	CES	599 299	Extonly	14				3		· · ·	UZ
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Shift		75 24	•								
Date	4-1	13-0									
Leadman		<u> </u>					_		ush, HF - Hot		1
	the nearest half gallon.	Γ	<del></del>						gent, P - Preso		
Work				_	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
185600	LBES	1195	Bo Flel	8-17				J			JE
275592	Bullacye	596	Crideoil	8-11-	12 3	5a 5		5			Je
325597	Evergreen	T- 905	Wasteslude	8-11				3			5し
475587	Petro Exp.	11-688	Feedstock	8-11	•			5			JZ
525590	CES	205	EThanol	8-14	16-18			3			57
695395	Tide Post	1050	5P-8	8-11				5			JEC
725444	CES	8177	Revash	7-11				3		n/c	JE
82551	Dana	599	TOI	18				4		nle	me
925601	Petro Exp.	11.1255	Corrosive Liqui	18-11				3			DZ
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**Process** 

Heel

(gallons)

Drum

No.

Time

Request

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Time on

Bay

Bay

No.

Time off

Bay

Cleaner's Initials

**Product Name** 

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Shift Date

Leadman

Work

Order No.

Record all heels to the nearest half gallon.

**Customer Name** 

Unit#

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5	hift	$\mathcal{I}'$	12	_								
E	ate		4-9-9				<b>F</b>					
L	eadman		172	_			4	rocess Key:				
R		the nearest half gallon.						team, C - Caus				
4	Work	_				Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
ħ_	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
-	135581	Enviro	tos	Flam. Solis	8-11-1	300	uns		<u> </u>			Z
	2 25580	CBS	256	Caustic .	8-11	-16			5			EVE
	324329	Batter SI	12303	Shryoil	8-11-1	2-		·	3			JL
_	425626	RMR	239325	n/H waste	8-11.	-12-			4		nc	me
	5											
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Shift	-8n	<u>-                                    </u>										
Date	4	1-8-9	_									<b></b>
Leadman		DU	-			1	Process Key:					
	to the nearest half gallon.	т	т————	T			Steam, C - Caus	<del></del>				]
Work	Overtowner Name	11.54.44	Decideral Name		Heel	Drum	Time	Bay	Time on	Time off		
Order No.	Customer Name	Unit #	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials	-
135642	CKS	رين ک	n/H waste	8-11-	16	ļ	<u> </u>	4	<u> </u>	*	mc	_
225641	Baker FM	\$27991	Dr. Hing Fluid	8-17				3	<u>'</u>		ひと	]
325639	Traport	1071	Ext. only	8-11	<u> </u>			4			MC-C	P
485635	CES	209	W.water					3			JE	1
5 25633	CES !	DT.2548	n/H warle	8-11-1	16		<u> </u>	8	<u> </u>	<u> </u>	GR	
675636		57-2	Oilywater	8-11				4.	!		52-7	mc
. 795511	Dana	599	TOT	8-11				4	ļ		no	
825575	-CES	271	Methanol	8-11-	16			3			56	_
925596	CES	20:40						4			pre	
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Shift			•								
Date	7-8-0	,9				F		·····			
Leadman	Armand	0	•			_	rocess Key:				
	the nearest half gallon.	1		₁			team, C - Caus				
Work					Heel	Drum	Time	Bay	Time on	Time off	
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
125630	Tideson	1056	J728	1184				<u> </u>			CP
225632	SHM	3/3	245 to 11	21128				3	<u> </u>		OHK.
325639	Tidepori	1071	EX wosh o	n/y				4	NIC		CP,
425634	Petro	1318	61401	, ,				3			17X
525548	Baker	24591	crude oil	111281	8			5	NIC		272
6	CES	100	EXT wash	1174				_3			AR
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Shift Date Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel Leadman F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior Record all heels to the nearest half gallon. Work Heel Time Bay Time on Time off Cleaner's Drum Initials Order No. **Customer Name** Unit# **Product Name Process** (gallons) No. No. Request Bay Bay 10 11 12 13 14 15 16 17 18 19 20 21 22 23

Oh: <del>tt</del>	1		OLO	i aiikwasii	Sinit ixebo	11					**
Shift Date	d-70	9									
Leadman	Armand	<del>7</del>	•			Cleaning P	rocoss Kov:	CE CAME	ush, HF - Hot I	Eluch DI Dio	201
	the nearest half gallon.	<u>v                                    </u>							gent, P - Preso		
Work	ganoni				Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Producţ Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
125548	Baker	24591	erude oil	111281	8 641	DYIN	15	5,	NC	AR.	JR
225470	RFR	255076	waste ware	118	1			d			CP)
325625	CES	228	C-61	1118				3,	NIC		AR
425623	chempak	543142	Wax	118				И			OP'
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Shift	- 1										
Date		4-6-9							·		
Leadman		FL				1	rocess Key:				
	the nearest half gallon.				г		team, C - Caus				
Work					Heel	Drum	Time	Bay	Time on	Time off	
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
125483	KUK	245082		8-11				3	<u></u>		UES
225494	Hurt	16734	Exastine	8-11				3			JE
325493	And I	8042	Disel Fliel	8-91				34	ļ		me
425495	CES	9 big	m 15mal.	11-13.	-18			2		رِ	2 44-JK
524362	CES	11-124	C=61-Reclean	8-11-				3			Je
625637	CES	400	Wentelle	8-41				5			JC
725567	JAm	318	Whe oil	8-11-12	2	<u> </u>		. 4		,	mc
825490	CES	7253	Methano?	8-11-1	8 Bos	2	Plo	ک			82
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Da		4-6-0	9	•			۴.					
	adman	Armano	Va	-			Cleaning P	rocess Key:	CF - Cold F	lush, HF - Hot I	Flush, DI - Die	sel
Red	ord all heels to	the nearest half gallon.		,,,	<b></b>				stic, D - Deter	gent, P - Preso		
	Work				_	Heel	Drum	Time	Bay	Time on	Time off	
_	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1	25366	CES	276260	N/HSolids	11817	16			1		CIT	57
_2	75565	CES	267	Casxceater	118				5			JP
3	25491	CES	265	Base oil	11816				5			58
4	25490	CES	7253	meThanoi	128				5	Ne		JR
5	25481	RFR	260724	water Rusi	118				5			52'
6	25567	JAM	318	bube oil	118				4	NIC		CP.
7	25457	TTS	754	Blam. Lituids	.11818				d	1		CP
8	25345	Baker	23700	oil slurry	111281	8 61	rums		3			AR
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Leadman		JU					rocess Key:				
	the nearest half gallon.	I		<del></del>		1	team, C - Caus				
Work	0		D 1 (N)	_	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
125484	JAM	313	@ Lukeo!	8-11-	2						
2 25475	CB3	271	corrosive	8-11							JE
325480	RUR	245098		8:11				ح			JE
425526	CFS	917	Alt waste	8-11				4			m
5 25345	Baker F	nx23700	. DilSlury	18				. 3		No	72-7
625486	CFS	270	Feedstock	8-11-	16			<i>E</i> /			me
72-745	to the ex										
825487	Ret co	1358	Blacksil	8-11-	12			5			
9 25488	Goloba 1	B77-2	Mywater	8-11-				5			JZ
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	the nearest half gallon.						team, C - Caus				
Work					Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
125485	OBS	263	Ocly Woles	8-11							25
225478	RUR	254321	Mud worker	811				U			mc
3 25479	CES	2815	W. Waler	8-11-16	2			4			mc
425465	RUR	255758	Pipe line W.	8-11				5			丁と
525465	RUP -	2651	27 Sewage	8-11				5			ガシ
625457	775	754	Set up	9-11-1	8			Z		NC	JE
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Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush   Flush	Shift											
Record all heels to the nearest half gallon   Work   Work   Coustomer Name   Unit #   Product Name   Process   Gallons   No.   Request   No.   Bay   Time on   Cleaner's Bay   Initials		1-3-0	9									
Work   Order No.   Customer Name   Unit #   Product Name   Process   Heel   Orum   Time   Request   No.   Bay   Time on   Cleaner's   International Process   Gallons   No.   Request   No.   Bay   Time on   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Bay   Ba		Armein	do	•								
Order No. Customer Name		the nearest half gallon.	T		<del></del>							
125476 CES 271 NiTric Acid 114 3 AR 2 25471 CES 259 Sulfavior teid 1148 4 CD 3 25346 Baker 191 Pe was 118 3 AR 4 25-166 Baker 2607 7 Exxan fireware 5 JR 525-165 RE R. 2607 7 Exxan fireware 1810 5 N/C SR 6 25479 CES 2815 WISTE WAITE 118 4 N/C CR 8 9 9 10 11 11 11 11 11 11 11 11 11 11 11 11		0	11.9.4	Davidson A. N		ž.						
2 25 977 ( 155 259 Sulfavir ted II 4 8 3 AR 3 25 4 6 13 a key 1 (91 ) fe coust 1 (18 3 AR 4 25 4 6 15 a key 2 607 7 (xxan firearter) 5 15 6 5 K F. R. 2 657 27 (xxan firearter) 6 25 4 2 a C F 5 28 15 coust 1 18 a U N/C C R 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Order No.	Customer Name		Product Name	Process	(gallons)	NO.	Request		Вау	вау	Initials
3 25346 Baker 1 (91 ) Le coush (11 ) 3 AR 4 2546 Baker 2607 7 Exxonfixentier 5 JR' 5 2546 R P 2 2657 7 Lange out 1810 5 M/C CR 6 25474 C F 5 2815 Waste water 118 4 M/C CR 7 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	125476	CES		NiTric Acio	114				3			# 12
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9       10         11       11         12       13         13       14         15       16         17       18         19       19         20       21         22       23	525-165	RER.	265727	waite mile	11810				5	1//		JR
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	the nearest half gallon.								gent, P - Preso		
Work	tro noticot nan ganon.				Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
125560	Butsext	2672	crude oil	11128				3	·		AZ
2 25555	R FR"	255449	Clycerine	118	<u></u>			4			ريون
325415	Andrews	1155	WOSTE WILLES	11818			]	5			JZ
425463	TEPPCO	946081	Crude oil	118				d			CP
525464	TEPPCO	945534	erudeon	108				3			AR
625-172	PETVO	592	Rewash	118				4	NIC		CP)
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Leadman		JL_				-	rocess Key:				
	the nearest half gallon.						team, C - Caus				
Work	Our L			_	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
13563	CES	406	Wwater	8-11-1	0			3			JE
275474	Chem lak	279Y	BC-612	8-11				11			mc
375472	Petro	592	Renash	ib			:	4			mc
425501	JAM	313	011	8-11-	12			3_			JE
5 25473	Globa!	57-2	služe	8-11				4	·		me
675467	RYR	255077	W. Water	8-11-1	6			<u>5</u>			プ
785471	team	164	choline oblor.		-7			30			JE
8	RYR	12450	mat Rewash	8-11				3			JE
9	CES	235	Phenol'	7-11				4			mo
10											
11			<i>:</i>								
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Eadman				•								
Record all hoels to the nearest half gallon.			71	•			Cleaning P	rocess Key:	CF - Cold FI	ush, HF - Hot I	Flush, DI - Die	sel
Order No. Customer Name	Record all heels to	the nearest half gallon.										
1 25470 Monie VI-1 Olywater 8-11 225460 CES 259 Redenin 9-11 11050 3 355462 CES 2-11 W. world 8-11 425461 CES 4.9 Lybe o. 1 8-11-12 3 5565 6275555 Ryy 255549 Chyceine 8-11-12 55645 6275544 Raker 97089 SIEVICACID 8-11-18 55645 7-CES 7 Hoses 8. 8-5345 Baker Enx23700 ol Slumy 18 2 Druns 5 nle Ju 9 Ry 1 12x50 Reclean 8-11 10 11 12 13 14 15 16 17 18 18 19 20 21 22 23								I		1		
2254/00 CES 259 Reckerin 9-11 1105°3 3 3 5E 3254/62 CES 2-71 U-water 8-11 5 JC 4254/61 CES 419 Lube 0; 1 8-11-12 3 JE 525555 Ruft 255449 Calverine 8-11-18 5558/5 4 n/c mc 624884 Raker 697089 Silvinic Acid 8-((	Order No.					(gallons)	No.	Request		Bay	Bay	Initials
2954/60 CFS 259 Red Renn 9-1/ 1105 50 3 JE 3954/60 CFS 271 U-world 8-11 5 JL 4254/61 CFS 419 Lupe 0 i 1 8-11-12 3 JE 525555 RYP 255449 Chycerine 8-11-15 55 50/5 4 n/c mc 6243544 Raker 6470245 Strong Acid 8-16 4 n/c mc 6243545 Raker Fax237200 Dil Strong 19 2 Druns 5 n/e J2 9 LYP 1 1250 Reclean 8-11 3 JE 10 11 11 12 12 13 14 15 16 17 18 19 20 21	103459	phoen ip	V7-1	Orlywater					5			JU
4 25461 CES 419 Lybe 0; 1 811-12 525555 RYR 355449 Grycerine 811-18 555015 44 NIC MC 6243644 Raker Gr72849 Silveric Acid 8-(1 4 my 7 — CES 7 Hoses 8: 825345 Raker Fanx337000 0; 1 Stray 19 2 Druns 5 nle J2 9 RYR 1 12550 Reclean 8-11 10 11 12 13 14 15 16 17 18 19 20 21	225460	CES	254	RedResin	9-11	110 59	ر ا		3			75
525555 Ryp 255449 Calycerine 8-11-18 55 5015  4 1/C MC 624384 Raker 6p7084 SIFURICACID 8-1  7 - CES 7 Hoses 8: 8+5345 Baker Park 237000 Dil Shirry 18 2 Druns 5 nle J2  9 - Ryp 1 10 3 5 nle J2  10 11 12 12 13 13 14 15 16 16 16 16 17  11 18 19 20 21 22 23	325462	CBS	271	W-Worler	8-11				5			172
6)4364 Raker GP7084 SUFFIRE Acid 8-(1 4 me 7— CES 7 Hoses 8: 5 TC 8)5345 Baker Family 100 19 2 Druns 5 nle J2 9— R4P 1 12x50 Reclean 8-11 3 3 SE 10 11 12 13 14 15 16 17 18 19 20 21 22 23	425461	CES_	419	Lube oil	8-11-1	2	1-		3			JE
674364 Raker GP7084 SUFVICE Acid 8-(( ) 4 ) me 7 — CES 7 Hoses 8: 5 7C 875345 Baker Fanx337000 DI Sumy 13 2 Druns 5 nle J2 9 — R4P 1 12x50 Reclean 8-11 3 - SE 10 11 12 13 14 15 16 17 18 19 20 21 22 23	525355	RYR	255449	Glycerine	8-11-12	1 55	5015		4		1/0	mc
845345 Baker Farkit Toa 18 Johns 5 Ne J2 9 — Lyk 1 Bax Baker Reclean 8-11 10 11 12 13 14 15 16 17 18 19 20 21 22 23	624384	Raker		SSIFUTICACIÓ	8-11				2/			me
845345 Baker Farkit Toa 18 Johns 5 Ne J2 9 — Lyk 1 Bax Baker Reclean 8-11 10 11 12 13 14 15 16 17 18 19 20 21 22 23	7	CES	7	Hoses	8				3			2
9	825345	Baker Fo			19	2 Dru	ns		5		nle	ナン
10       11       12         12       13       14         15       16       17         18       19       19         20       21       22         23       23	9			1	8-11							SE
11       12       13       14       15       16       17       18       19       20       21       22       23	10											
13       14         15       16         17       18         19       19         20       19         21       10         22       10         23       10	, I				_							
14       15       16       17       18       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       19       10       10       10       10 <td< td=""><td>12</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>:</td><td></td><td></td><td></td></td<>	12								:			
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16	14											
16	15											
17         18         19         20         21         22         23												
18       19       19       19       19       19       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td></td<>							-					
19       20       21       22       23												
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22 23 29 20 20 20 20 20 20 20 20 20 20 20 20 20								·				
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14 14 15 15 16 16 16 16 16 16 16 16 16 16 16 16 16	1											
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			1	CES	Tankwash.	<b>Shift Repo</b>	rt					
Shi	ft	- $2$ $r$	$\gamma q$					-				
Dat	te	3-	31-9									
Lea	adman	•	グレ	•			Cleaning P	rocess Key:	CF - Cold F	lush, HF - Hot I	Flush, DI - Die	sel
Rec		the nearest half gallon.			,	T		team, C - Caus		1		
	Work				_	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1	<i>93557</i>	CES	206	1/4501,25	7-11		12		5			77
_2	25572	CES	270	Feedstock	8-11	3550	٧		3			SE
3	25569	JAM	271	Dise 1	8-11				S			JZ
_4	25453	RHR	255014	N. Waler	8-11				5		•	JC
5	25558	Team	747	Clornecharline	7-11				3			JE
_6	25554	PetroEXP.	LT-1199	fecten	841-16				3			JE
	25421	CES	206	Digout	18				2			BH-CH
8	253 99	RYR	274321	Working Soli	8-11-1	6			2			CH
_9		Trimac		Setup MOI	18-8-	/ )			2/		nlc	mc
10	25597	Pelco	Lt-794	Feed Stock	8-11-	12			Ö			JE
11	, i		<u> </u>									
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Shift	7 21 50		•								
<u>Date</u>	3-31-09		•			Cleaning P	rocco Kovi	CE Cold El	ush, HF - Hot I	Eluch DI Dio	aal
Leadman	the nearest half gallon.		•			l .			gent, P - Preso		
Work	the hearest hair gallon.				Heel	Drum	Time	Bay	Time on	Time off	
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
125448	Baker	1236	Re wash	11/28				4			P
225552	CES	259	water & GA	114				5		•	57
325545	FR F.R.	255972	seugge	118				5			378
425391	Baker	1191	anude oil	1117	8			3			AR
52568	CES	256	Fredstock	1124				4			CP
625354	CES	104	N/HWKSTE-W	118				3			A95
725453	BER	255014	waste with	118				6	NIC	·	275
825346	K.F.R.	260187	coasie water	119				u			م م
9	Paker	1226	Rosell	-	····			-			A
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Date		3-30-	9								
Leadman		31	,			Cleaning Pr	rocess Key:	CF - Cold FI	ush, HF - Hot F	lush, DI - Die	sel
Record all heels to	the nearest half gallon.					F/S - Flush/St	team, C - Caus	stic, D - Deterg	jent, P - Preso	lve, Ex - Exter	ior
Work					Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
125451	Ican	102	choline chleric					4			2nc
275452	MPC	814	Base Oil	8-11.				1			me
325408	RUR	260163	Sewase	8-11				-			onc
425446	Valero -	T-7193	Hez-waste	8-11-	12-14			3			JE
595543	TRYR	255012	Sowage	8-11				5			ガレ
6	CES	1264	1	8-11-16	>	-		5			JC
725551	CES	265	Lightends	8-11				5			5
8 25448	paker	mx1236	Light Ends Reclean	8-11				4		nle	me
9											
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Shift											
Date	3-30-0	9									
Leadman	Armen	6					rocess Key:				
	the nearest half gallon.	_			1		team, C - Caus				
Work	_			-	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
125613	Baker	829	water & made	4/18				4			روم
222489	Baker	3355	Crudeoil	11128				3_			AZ
3 25.304	Trimac	49-7540	MDISELY	P1218				5			JK
425449	Kirscher	6001	arboriTe	118				4			CP
5 25 449	ChemPak	643038	9 wax	118				5			UZ
625542	leam.	163	FOTTY Acid	118				5			JZ
725450	Don't 4	TOT65	corbon	118				4			CP
8	,										
9											
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Shift	E. C. C. C. C. C. C. C. C. C. C. C. C. C.			i alikwasi _i y							
Date	-3-28-0	9									
Leadman	Armano					Cleaning P	rocess Key:	CF - Cold F	ush, HF - Hot I	Flush, DI - Die	sel
	the nearest half gallon.			· · · · · · · · · · · · · · · · · · ·					gent, P - Preso		
Work	Overtament Names	1.1 14.44	Des des Allens	<b>D</b>	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
125571	JAM	3/9	Lubeou	118			1777	4			(2)
225411	Baker	494	crude oil	11128				3			D+1C
325522	CES	256	waste waren	118			,	5			2X,
425,579	Texas	6409	wasteward	1118				4			CD
5 25524	TidePor	3014	xyleve	1184			·	5			SK'
625418	CES	249	FOTT MICONE	118				~3			AR
725525	CEZ	295	Pump	118				3			AZ
8			1 00 11 1								
9											
10				·		_					
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Date		-27-9	•								•
Leadman		<b>ブレ</b>	·			Cleaning P	rocess Key:	CF - Cold Fl	ush, HF - Hot I	lush, DI - Die	sel
Record all heels to	the nearest half gallon.	,	·						gent, P - Preso		
Work					Heel	Drum	Time	Bay	Time on	Time off	
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
125445	Firebird		Feed Stock	8-11							mc
277419	Chempack	3 02-9	7-4-0-777	8-11				٤			JL
3 22521	Baker	P4299	Watermed	8-11				5			72
425572	-RHR	245087	Sulfuncacid	8-11				5			プレ
525367	RYR	254298	Water & Rost	8-11				Ý			mc
625411	Baker n	7474 SK	e enderil	8-11-13	2-18			ر. ري		Me	JE
7											
8											
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10								——————————————————————————————————————			
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	2	ne	CES	Tankwash	Shift Repo	rt						
Shift												
Date		26-9				[a					<u> </u>	7
Leadman	east half author	3U				1	rocess Key:					1
Record all heels to the near Work	est han gallon.				Heel	Drum	team, C - Caus Time	Bay	Time on	Time off	Cleaner's	┨
	omer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials	
125506 TIC	Laport	1082	IPA	7-11				3			30	1
225515 Kir	sher	1025	Custo Goat	98-11				3			JE	]
325508 Pet	10	736	6-5035	8-11				5			JL	
495514 5	Am	319	Lubeail	8-11-19				3			JL	1
525432 Ba	Ker	\$3010	SOL cruzeoil	8-//-	12-18	1		3			JE	↓
625504 Ti	deport	3014	XY lene	8-11				84			TO N	<u></u> ተረ
	deport	1090	Fuel 011	8-11				.5			JC	L
825503 En	UITO	105	Ollywater	8-11-	18	7 Drum	5	5			JL-J	4
925417 FIX	esird	518230	FeedStock	8-11				4			mc	
10265 OF Pr	onix	V7-1	oilywater	8-11				4			mc	
1125428 R	42	274818	N/H Solits	8-V)	-/6			<u>á</u>			BH	
1295516 CE	ξ	250	W. water	8-11				_5_			ゴム	]
13 22-488 Bak	'er m	W12.									ļ	]
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22			·				·					1
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	CES Tankwash Shift Report											
Shift												
Date	)	3-25-0	9			•						
	Leadman Armando Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel  Record all heels to the nearest half gallon. F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior											
Reco		the nearest half gallon.					<del>                                     </del>					
l	Work	0		Door door ( No.	<b>D</b>	Heel	Drum	Time	Bay	Time on	Time off	
	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1/	25385	Chempak	2596		11818				9			2/2
2	45436	PETVO	794	Tay Hex	118				el			CP
3 5	24269	RFR	254266	coustic	11818				3			AR
4	25438	CES	213	0,1	118				if			CP
5	25439	Leels	1165	Diesel	118				4			CP
6	25440	tidePOVI		Kasman Salve	11/1/84	(			4	1,1		P
_ 7	5430	TidePort	T=639	Hap/halene	118				5	NIC		JK.
_ 8	5407	TEPPLO	97186	crude oil	118				d			P
9						-			•			
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Date		<u></u>	3.25-9	•								
	dman		つし	-			_			iush, HF - Hot i		
Reco		the nearest half gallon.	T			· · · · · · · · · · · · · · · · · · ·				gent, P - Preso		
	Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
+	Order No.	Customer Name	259	1 1 1 1	8-11	(galions)	NO.	Nequest	13	Бау	Бау	J
1	25715	00	<del>5</del> 59.	Sulfuricand								
_ 2	15430	*		Napinalere	8-11				\$			JL
_ 3	25410	C/+5	129	Peppers	8-11				3.			JE
4	25442	Changack	543038.	9 Alechololers	8-11				<u> </u>		nle	JL
_ 5	24242	Daker	P6835	SulFuric Acid	8-11-1	8			3			JE JL
6	2-5409	Team	785	choline	8-11				4			JZ
7	·	Petro	1255	Lecleun	8-11	·			4			JU
8	<b>2</b> 5	*										
9	25414	Octro	17-736	Blackoil	8-11-12	<b>-</b>			4			12-54
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Shift			-									
Date	3-24-0	$i\mathcal{G}$	-									
Leadman Armando			Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, Di - Diesel									
Record all heel	s to the nearest half gallon.					F/S - Flush/S	team, C - Cau	stic, D - Deter	gent, P - Preso	lve, Ex - Exter		
Work			:		Heel	Drum	Time	Bay	Time on	Time off	Cleaner's	
Order N	o. Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials	
12531	3 PSC	1518	AsphalT	11/1/16	18			3			17	
2 25 40	2 CES	259	oil y water	218				5			2.73	
3 25405	InnerPlant		Alcohol	118				41			CP	
425-10	6 Inner Plani	189	Arcohoi	118				5			J.R.	
5 2542	2Bullzere	675	crude oil	118				5			25	
6 2539	7 Petro	372	wastewater	113		<u> </u>		-			CP	
7 25 40	ychempak	8216	Wex	118				3			AR	
82438	O CES	615	westesoinds	1 ( ) 66				3			52	
92424	e CFS	629	W/HSD lids	1186				2			m.C.	
102428	9 053	636	HIH Solids	11816				· 3			A. R	
11 2542	6 CES	256	Resin	11810				<u>.3</u>			אר נ	
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Dat	е		3-24-9									
Leadman JU		_	Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel									
Record all heels to the nearest half gallon.				<del></del>		team, C - Caus						
	Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gailons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
	25427	1, deport	17-971	naptralene	8-1/	(galloris)	NO.	request	Z/	Бау	Бау	700
			11.	11 1 1 The				<u> </u>	3			7
2		PUR	24/116	Hydrolic Fluid		<del>                                     </del>						00
	25425	CES	264	Light Ends	8-11-				<u>3</u>			00
	25431	velo EPg.	1255	Lube 011	8-11-1	2			2/			JPK
	25435	CES	259	Caust.c	7-11				3			UE
	25308	Bakerc	Oil		15-11				3			سلخ ا
7.	25385	Chem Pack	2596	way	8-U-	18 4	gals		5		nle	た
8	25437	Petro Erp.	1206	word Lube oil	8-11-1				4		-	SPR
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Date	3-23-0	9	•									
Leadman Armando			-			Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel						
Record all heels to the nearest half gallon.				T					gent, P - Preso			
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials	
125392	CES		oilywater	11 %	(gamerra)			5			7-8	
275391	TAM	32	Pil	117				4			C' D.	
325306	PED	274807		11216				1.			51	
415295	Priva	1046	Delevaeni	11 8				5			T-2	
515703	TidePort	1082	FUPL Dil	1184				il			63	
625322	Team	8091	chine Callide	1/8				4	1 1	,	P	
725.3/7	PCS	1518	Asphali	1118				.3	NIC		A-8	
825337	RER	259039	Amine	118				5	1		58	
9	1,11										,	
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Dat		?	d 23-9	•	•							
	adman		42	•			Cleaning P	rocess Key:	CF - Cold Fi	lush, HF - Hot	Flush, DI - Die	sel
Rec	ord all heels to	the nearest half gallon.						team, C - Cau				
	Work	Customer Name	114.4	Dun dunah Naman	5	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1	25388	RYR	259513	BIO Diesel	8-11-16				4			JAR
2	15400	LEES	1075	FULL Add	8-11				4			THE
3	25313	PSC	1518	Asphalt	211-10	-18			3	•	ne	JE
4	25403	CES	241	fed Resin	9-11-1	6			5-		-	J2_
5		RUR	2 con	tainents 12710	Lewash	3-11			5			プレ
	25401	CES	419	Light Ends	8-11				4			TPL
7	24378	BJ	2 Tot	es Franagua	8-11-	16			5			JL
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Request

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

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Cleaner's

Initials

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	ıdman	· · · · · · · · · · · · · · · · · · ·								ush, HF - Hot l		
Rec		the nearest half gallon.	· ·	·						gent, P - Preso		
	Work	Overtenes en Nama	11-7-4	Donalis et Nove	D	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1	25521		20332	Vinyl Acelate	8-11				4			$\cup$
_2	25384	Nollet	1524	Viny Acetale	8-11				4			50
3	25331	deras oil	5095	Sultio Acid	8-11				ی			JL_
_4	25313	Psc	1518	Defoleun Asoha	H 9-1	1-12-1	<b>Y</b>		3		Mc	JE
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Shift Date Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel Leadman F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior Record all heels to the nearest half gallon. Heel Time Bay Time off Work Drum Time on Cleaner's **Customer Name** Order No. Unit# **Product Name Process** (gallons) No. Request No. Bay Bay Initials n/c Foric Acid 8-11 5 3 n/c ASPHAIT 18 Toles 10 11 12 13 14 15 16 17 18 19 20 21 22 23

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Date		2-19-9									
Leadman		51				_			ush, HF - Hot		
	the nearest half gallon.	1					T		gent, P - Preso		
Work	Custom on Nome	11	Dun dood Maria	D	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1 25317	US	271	Oil & methanol	8-11-	W 35	5~()		3			JE.
225555	cts	852	letro dist-	8-11			٠.	4			JAR
3 25 34 2	CES	241	Reg Resin	\$9-11-	110	59 5		3			JE
425334	CES	271	Whater	8-11				?			
5 25 338 8	Loto Exp.	1201	Feldstock	8-11-	12			) ⁽ )		<	DE
625330	LEES	2695	FathyAcrd	8-11				مرا			SE
7 2-5333	Fire Bird	361	Hydro carbon	8-11				5			J
87539	LEES	1175	enolineChbr.	281)				5			22
9	CES	\$3 Tot	es —	£ 3-11				_5_			ゴム
10	はす	2 To.	tes	8-11				4			JPR
11 25343	CES	409	W-Water	8-11-	16			4			JPR
12 25 344	CES	8177	Sulfuncacid	8-11		- training		4			JPR
13				- ***						<u> </u>	
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Date	3/19/19		- - / \								
Leadman '		<del></del>	- ( <del>)</del>	\			rocess Key:				
Record all he Wor	els to the nearest half gallon.	1		<del>                                     </del>	Heel	F/S - Flush/S Drum	team, C - Caus Time	Bay	Time on	Time off	Cleaner's
Order		Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
12420	y ces	103	Strainer BACKUS	08-11				2			JP
2253(5	IWNIR Plant	8181	Clycol	08-11				3/			cf
3 2531		P4313	W/H W/WAter	8-11				<i>5</i> ^t			JR
48534											
5 3530		L-919.	T	31-67-13-	1	. 6.5		4			cp
6 2 <b>3</b> 3		6054	caude o.	8-11				4			CP
72533		3106	Pelo. Dist	8-11				-5	1/10		JR
<u>8 253</u>	30 /EES	2695	Faffy Acid	811	<u> </u>			5	11/10		JR
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Shift Date Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel Leadman F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior Record all heels to the nearest half gallon. Heel Time Bay Time on Time off Cleaner's Drum Work Order No. (gallons) No. No. Initials Unit# **Product Name** Bay Bay **Customer Name** Process Request Derivative <u> ご</u> 8-11-16-12 4 04 Exot -only 8-11 10 11 12 13 14 15 16 17 18 19 20 21 22 23

Shift Date	119/18				•						
1	Sand			(		Cleaning Pr	rocess Key:	CF - Cold F	ush, HF - Hot i	lush, DI - Die	sel
	the nearest half gallon.		$\cdot$ (1	)					gent, P - Preso		
Work					Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1 /7/98	LEES	2285	within Acid	03-68-11				5	500		cf
224214	BAVOR	491	cout. 12×50	8-11		-		_3			JR
3 17191	51	7-557	Rivise After	07-11-6				4			CT
4 17/89	76.8 48.01	266311	3Detorgen/	68-11				4			CP
5 2530 r	Light House	#053		07-11				5			JR
625363	Dirt -	DUSFG	w/ solias	08-11				3			51
724214	Biker	12×50	The Controll	8-11				2			TR
894365	Awhers	1707	Rince After	07-11				3			7/
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		5. Anes		•	1)		Cleaning P	rocess Key:	CF - Cold F	lush, HF - Hot	Flush, DI - Die	sel
_		the nearest half gallon.					_	•		gent, P - Preso		
	Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's
1	17187	Petro Express		Burkic scid	88-11				50004	(21)35°	8:20	CF.
2	17185	CES	270	Al charl I	8-11		\$\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		grav 5	\$18	Piod	JR
3	24214	Baker	731	mates	08-11				2	7:00		TA
4	17175	BAKOR	7.7397	carp maske 420	8-11				3	6:45		TR
_5	17186	Bulk Eye	204	crude oil	8-11				4	10:30		CP.
6	24294	CES	103	Straine Backet	12-8-11-18	<u> </u>			3(1)	71.00		MC/BH
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Dat	e	-3	-17-9									
Lea	dman		<b>ブレ</b>				Cleaning P	rocess Key:	CF - Cold Fl	ush, HF - Hot	Flush, DI - Die	sel
Reco	ord all heels to	the nearest half gallon.					F/S - Flush/S	team, C - Cau	stic, D - Deterg	ent, P - Preso	lve, Ex - Exter	ior
	Work					Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
	Order No.	Customer Name	Unit #	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
_1	17197	CES	105	Oil Disel	8-11				3			JE
_2	17193	Mission	797	Base oil	8-11-1	2		:	3			JE
3	17192	Mission	295	Baseoil	8-11-1	2	<u>.</u>		2/			JL
_ 4	17190	RYR	264309	Chempio	8-11				3			JE
_ 5	17196	CES	270	WIW	8-11				3			JE
_6	24377	ST	5 totes		8-11-	16		·	5			JAR
_ 7	17/89	RYR	266311	Pouprietay d.	8-11				\$4		MIC	TER
8	`-	fran -							3'		£	JL
_ 9		- RYR	12750	Reclean	8-11				<i>f</i> *			
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Rec		the nearest half gallon.	1							gent, P - Preso		
	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	17181	RUR	260218	Filter unit	8-11-19		110.	Roquoot	. 8			7/
2	17186	Tideport	1084	Marine disel	8-1)				0			P1.
3	17173	Rilliago	(077	crudeoil	8-11				4			TOO
4	24204	Rate!	264857	Waste waste	8-11-1	12 70	0 50/5		4		i	TPP
	17176	Evalca	27	VinvlAcetate	4 -	عر هـ			, 2		•	12
6	210230	Baker	255	DiAV water	8-11-18	25	Drap		72			12-17
7	17175	Baker	P7297	Survic Acid	8-11						NC	15
8		RYR	mat	5 Reclean	8-N		,		5			5
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Order No. Customer Name Unit # Product Name Process (gallons) No. Request No. Bay Bay In 124390 Tide port 106 011 8-11 2( 324386 etgs 419 1. shten 1; 8-11 2( 324386 etgs 419 1. shten 1; 8-11 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	
Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel Record all heels to the nearest half gallon.    Work Order No. Customer Name Unit # Product Name Process (gallons)   Heel No. Request No. Bay Bay In 124390   Tide April 106	
Record all heels to the nearest half gallon.   F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior	
Work Order No.         Customer Name         Unit #         Product Name         Heel (gallons)         Drum No.         Time Request         Bay No.         Bay Bay Bay         Time off Cle Request         Cle Request         No.         Bay Bay         Time off Cle Request         Cle Request         No.         Bay Bay         Time off Cle Request         Cle Request         No.         Bay Bay         Bay Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay         Ingress of Bay	ŀ
124390 Tideport 106 01 8-4 224386 egs 419 1.9htends 8-11 324387 ces 262 c-61 8-11-12 3 424383 KL Chempak 259 Gray 8-11 524391 ces 275 Winder Ian 8-11 624392 ces 270 Gesyntater 8-11 724393 ces 6731 Dinjurater 8-11	ner's
224386 etts 419 1.5nten 15 8-11 394309 ces 262 c-61 8-11-12 3 424383 Kl Chempak 259 Grap 8-11 524391 cts 275 Winder 8-11 624392 cts 270 Gasy Water 8-11 724393 cts 6731 Diny water 8-11	ials
394309 CES 262 C-61 8-11-12 3 3 3 424383 KL Chempak 259 600 8-11 5 3 5 3 5 5 624391 CES 275 Winder 8-19 5 3 5 724393 CES 270 Gest Water 8-19 3 5 724393 CES 270 Gest Water 8-19 3 5 724393 CES 270 Gest Water 8-19 3 5 724393 CES 2701 0 My water 8-19 3 5	
424383 KL Enempork 259 Gray 8-11 5 524391 CES 275 Winder lan 8-11 24 5 624392 CES 270 Gest Water 8-11 3 7 724393 CES 6731 O'Ny Waster 8-11 3	PR
574391 CES 275 Winder lan 8-19 624392 CES 270 Gesynhater 8-19 724393 CES 6731 Dinywester 8-4	Œ
574391 CES 275 Winter lan 8-19 624392 CES 270 Gesyntater 8-19 724393 CES 6731 Dinywester 8-4	
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Date	3-12-	09	•								
Leadman	strmur	Lo	•						lush, HF - Hot f		
	the nearest half gallon.	·							gent, P - Preso		
Work	•			_	Heel	Drum	Time	Bay	Time on	Time off	
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
124251	CES	271	caustic,	118				3			77
221257	CE3	241	westeamer	118				4			<u>C</u> P
324249	a.C.	70671	INK	11128				И			CP
424311	Trimate	49-6286	Sa al huter	011813	18			5	NIC	•	571
524258	Tideport	B0/4	Xy/exe	11811				21			C 10
624220	Baker	26502	Slurry oil	11121	<b></b>			3	M/ (_		# R
724247	CES	249	merhanos	118				3			OFR
824259	Hydrocyber	18807	Lybeoil	118				d	N/c		OP
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Date		3-12-9									
Leadman		Th				Cleaning P	rocess Key:	CF - Cold Fl	ush, HF - Hot F	lush, DI - Die	sel
	the nearest half gallon.			<u> </u>			team, C - Caus				
Work	O	11	D. I. I. N.		Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
17439	Hyd. Eng. Pro.	18807	Lubeail	8-11-13	<u>ب</u>			4			JPR
234366	Tideport	100	xylene	8-11				4			JAR
324367	CES .	276433	nla	8-11-16	2			2			50
424313	CES	279019	nly	8-11				2			PP
524241	RYR	259955	- Caustic	8-11-1	18 55	-5045		21			JPR
624220	Baker s	126502	em slumpil	8-11-12	70	sals		3			JE
724262	CES	104	nIHSolids	7-11	,			3			JE
824201	CES	271	wwwder	8-11				3			プピ
92431	Trings	49-6286	Latex	9-11-1	3			5		NC	JL
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Da	te	3-	-11-9	_									
	adman		JU	· •			4	rocess Key:					
Rec		the nearest half gallon.			· · · · · · · · · · · · · · · · · · ·	<del></del>		team, C - Caus	·	T			
	Work Order No.	Customer Name	Unit#	Produçt Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials	
1	24243	Liquid	5194	soy bean oil		(9=)			4			SPR	
	24248	JAM	3/7	oi i	8-11-	12			3			J=	
3	24252	CES	248	Red Resin	9-11	1105	<del>- 1</del> 5		145			五	
	24256		7701		8-11-0	?			23			JE	
	24255	CE 5	V 248	Wisslids		18	:		4			J2-JP	<b>*</b>
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	dman	Arman	la	•			Cleaning P	rocess Key:	CF - Cold FI	ush, HF - Hot I	-lush, DI - Die	sel
Reco	ord all heels to	the nearest half gallon.			· · · · · · · · · · · · · · · · · · ·		F/S - Flush/Si	team, C - Caus	T			
	Work	•			_	Heel	Drum	Time	Bay	Time on	Time off	
	Order No.	Customer Name	Unit #	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
_1	24240	CES_	221	C-61	71128	8	3 024	101	5			2.1
_2	24246	CE3	878	Rewash	118/6			·	d			CD
3	24245	055	224	Solids	11818		6 044	M.	3			AR
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Date	3-1	10-9									
Leadman		ゴレ	•			1	rocess Key:				
	the nearest half gallon.						team, C - Caus				
Work			<b>5</b>		Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
104234	RyR	258446	hewas n	8-11				3			せを
224235	RUR	259036	Remain	8-11				84			JZ
324236	Baker	GP7018	SolaAsh	8-11				3_			JE
4 24238	Dart	FG 42	carbon	7-11				4			JE
5 22828	Baker ST	FVP 8240		8-11-12	2-18-1	6		5			プレ
624237	RUR.		water oniz	8-11				4			ナム
724239	CES	423	.W. Wales	8-11				3			JE
8											
9											
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Date		3-9-9	•								
Leadman		サレ	•			Cleaning P	rocess Key:	CF - Cold F	ush, HF - Hot l	lush, DI - Die	sel
	the nearest half gallon.					F/S - Flush/S	team, C - Caus		gent, P - Preso		
Work				_	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
124858	CES	25-9	Ollygua lev	8-11				3,			JE
2247-21	CES	270	5Hell 011	8-11				4			JPR
324230	Ces	271	Dily water	8-11				2/			JPR
424229	Burnstormer	806	com starch	x-4				7			JPR
5 24228	Andrews	5095	passivation	3-7-11-	21			3			JE-J.
624231	CES	105	n/HSIJdra	816	Dung	teel		3			JE
7 22828	Baker St	VP824OL	crudeoil	12				5		nlo	<b>ゴ</b> し
8											
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	the nearest half gallon.				r		team, C - Caus				
Work			5		Heel	Drum	Time	Bay	Time on	Time off	
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
124224	TEPPLO	931805	crude oil	118				H	, ,		CV
2 22828	Baker	8240	crude oil	11178	18		<b></b> ,	5	NIC		52
324233	CES	414	melhanoi.	11818	250	901-	RIO	_3			AR
474221	CES	276227	russe Studg	C/181	8 100	901.	2/6	4			OP
5 24283	(FS	276519	N/12 Solits	311816		9	170	1			mc
624312	CFC	254	Bascoil	118				3			477
7	CEC	POLY I	ank	117				3			781
8											,
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Leadı		Armen do								lush, HF - Hot F		
Record		the nearest half gallon.	<del></del>					T		gent, P - Preso		
	Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
	4310	CEC	2815	(-61	11128				3	. 1		AD
V 2 ]	2828	Baker	8240	crudeoil	111248	55	ral-		5	N/C		TR
32	41361	JAM	314	hube oil	118				U			CP
42	4223	chem Pak	543220	was	118				<b>3</b>			AR
52	4226	CES	257	C 61	11128				ul			CP
62	4225	Lees	1105	IPA	1172				3	<u> </u>		7,6
7												
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	s to the nearest half gallon.		T						gent, P - Preso			-
Work			Due don't Name		Heel	Drum	Time	Bay	Time on	Time off		
Order N	<del></del>	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials	<b>∤</b> !
12422		221	n/A-Solids	8-11-1	8	<del> </del>		3			UE	<u> </u>
2 2421	6 then pack	2586	Arc 165	8-11	<b></b>	<u> </u>		q			JPK	<u> </u>
3	+ CES"	12-64	2-61	8-11-	16	<u></u>		4			JPR	
4	- clean out	the gu	itters -	18				3-4-	5		JPR-JZ	f-JE-A
5	CES	298	Ext only	14				3			JE	
6	- CES	2000	Extonly	14				5			TC	
7												
8				<u> </u>			<i>*</i>					]
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Dat		3-	6-9	•								
	ndman		T.L.	•			_	rocess Key:				
Rec		the nearest half gallon.	1			<del></del> -		team, C - Caus				
	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1,	24211	CES	221	SES N/H Solid	, 8-11	-18			2	_		mc
2	24217	LEES	965	calgum Branse	7-1	,			5			J
3	24212	Petro Exp.	1199	Yubascoll	8-11				2/			JPR
4	24218	Tidegort	1	Acolic Ac. 2	8-11				4			JPR
_5		Chempack	2586	ARC 165	8-11				5		nlc	20
6	94303	Tidepost	1093	way	8-11-	18			3			DE
	24222	CES	220	114501,28		-18			3		nlc	JE
8	24221	Tideport	305 A	pump	8-11				۵			56
9							gi.e.					
10										Δ.		
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Sh												
Da	<del></del>	3-6	-09	-			<del></del>				·	
	adman	Mas	udo-	-				rocess Key:				
Red		the nearest half gallon.		T				team, C - Caus		T		
	Work	Custom on Name	1114.44	Dog dog t Nove	D	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1	24210	165	109	Oil y way of	110		<u> </u>		3			AR
_2	26310	CES	622	NHSOLIDS	118				3			AR
_3	26264	Baker	8148	Slurry oil	1172	1618	1		5			52
_4	24307	Baker	29029	waste water	11128				U			CD
5	24303	TidePori	1093	wax.	11818				3	N/C		AR
6	24215	Leels	2005	Rewash	118				5	10		JR
_7												<b>,</b> , ,
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Leadman	franco	lo:							ush, HF - Hot I			
	the nearest half gallon.	<del></del>		T					gent, P - Preso			
Work	<b>.</b>				Heel	Drum	Time	Bay	Time on	Time off	Cleaner's	
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials	-{
124304	Andrews	1721	Rewash	417				5			JR.	1
274360	ETS.	342	Remash	117				vi			CP	
324305	PETYO	592	evadeoit	11178		<u> </u>		3		!	BR	
424305	Pulida	592	Perro Disi	11128				. 3			AR	
524373	RP2	25522	way V x mc	11/80	8			4			CP	
624201	"(E31")	100	N/4 SAL: 18	11011	6		_	3			AR!	1
724202	hiouid	B-1593	FILELOIL	118				5.	N/C	,	77	1
824206	CES	243	was te war	1,13				3	71		22.	1
924207	CET	259	pil	118				4		_	1 D	1
1024284	CFC	27/108	waste Solia	152181	10			-7		3 Hd	V)ns	1
1124297	OFT	0825742	2 50:1	1187/-				2		JAV	mi	7
122427 2	CFC	31199	N THE COLIN	0118/				2		- C   F	777	
13 24374	PFS	19787	11/4/ (2/1)	1186			<u> </u>	2	,		TAIL	1
14		2100	N (7-5011 als	11000							~ 149	1
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Da	te		3-4-9	_								
	adman		_ ブレ_	-			3			lush, HF - Hot		
Rec		the nearest half gallon.	<u> </u>		<del></del>					gent, P - Preso		
	Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24305	Pulido	592	Petro Pist.	8-11-12		1.10.		\3		n/c	JE
2	24301		<del> </del>	Muddworler	8-11-18		15 0/10		5		,,	30
3	24375	Tiderort	1077	108	8-11		1		5			176
4	2286	- 2	21568	BUFF	8-11-	18-1	ラ		2/		,	IPR
5	24379	Pulido	17-874	Mixed Hydrocan	an 8-11	-12			3			J_
6	24300.	1deport	1049	JP-8	8-11				3			JE
_7	24382	Petro Exp.	LT-1318	Trubuse oil	8-/1				5			ナム
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Leadman	Armendo					1			lush, HF - Hot I		1
	the nearest half gallon.	ı							gent, P - Preso		
Work	Out to the Name	11-4-4	Doodset Name	Dec	Heel	Drum	Time	Bay	Time on	Time off	
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
124370	CES_	270	shell oil	118				5			D.K
2 2428	CES	337	met kanol culis	E118	16			3		· · · · · · · · · · · · · · · · · · ·	09
3 2-1266	Baker	28978	wastewater	11128				3_			HR
424371	CES	259	Base pil	118				5			DR.
524372	CES	1105 Car	160 Č)	108				4			CP
624297	PETYO	372	w-water	118				4	1 1		CP
724300	TidePon	1049	5-12-8					3	N/C		AR
8 24375	TideDows	1077	JP-8	118				5	NIC		JR:
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Date		3-3-9	•								
Leadman		157	•	Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel							
Record all heels to	the nearest half gallon.					F/S - Flush/S	team, C - Caus	tic, D - Deter	gent, P - Preso		
Work				_	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
194271	Baker s	129034	Westerverter	8216-1				4			JIF
224276	Bakel S	123121	Crude water	8-11-12	-16			5			2
324295	CES	228	Champion wites	8-11				3_			56
424354	saker Si	127492	Prekinsel	8-11-7	6			3			JE
524368	CES	256	Shell oil	8-11				4			JPR
624274	Baker Si	29098	Washerbuler	8-11				5			ナし
724369	JAM	312	45700il	8-11				3			JE
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	dman	Armen de	<b>)</b>	_			_	rocess Key:				
Rec		the nearest half gallon.						team, C - Caus	<del>,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>	·		
	Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24291	CES	228	WESTE WALLY	113				4			CP
2	24275	Baker	3358	WOSIEWATE	118				4			C9
	24288	Chem Pak	2557	wax	118				5			JR
4	24290	CES	270	DIXWALL	110				_5			275
5	24292	Andrews	1807	Re wash	117				5			JR
	24363	Baker	29098	WESTE WELLEN					-3			A 12,
	24272		21444	coastewarer	118				И	1 1 2		CP
8	24276	Baker	23121	crude oil	11812				5	N/C		26
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Shift	<u> </u>						4.	1					
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Lead	dman	Armand	17	Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel									
Reco		the nearest half gallon.			F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exter								
	Work	_				Heel	Drum	Time	Bay	Time on	Time off		
_	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials	
_1/2	22926	Andrews	1807	GORP.	11818				5,				
_2	26328	CATX	602	N/H Solid	11816				ul			CP.	
_3	24280	CES	404	EXI wash	1115				3			H-52	
4	14395	£13	7-183	Rewash	11716				4			09	
_5	16237	GTS	T-44d	Rewash	11716				3		·	AR	
6	24325	CE3 L	L1305	Base oil	11818	16			41			CP	
7	24277	Bullzeye	590	crudeoil	118				5			572	
8	26284	Baker	26505	ACTIVICACIA	11818	2	175 €	al	3			AR	
9	24264	R.F.R	255971	WASTEWHILL	118		V		5			J72	
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Shift Date Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel Leadman F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior Record all heels to the nearest half gallon. Heel Bay Time off Drum Time Time on Cleaner's Work Initials Order No. **Customer Name Product Name** (gallons) No. No. Bay Unit# **Process** Request Bay 34 3 Note Tota Metherno 1094 Extrem S. 10 11 12 13 14 15 16 17 18 19 20 21 22 23

Shift											
Date ₍	2-28-	99									
Leadman	Anieno	10 m				[			lush, HF - Hot I		i i
Work	the nearest half gallon.				Heel	Drum	Time	Bay	gent, P - Preso Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
124968	Petro	1255	Base Oil	11128				4			CP
224368	Chem Pak	543142		118				3	,,,		AR
327926	Andrews	1807	SORP	11818				5	NIC		DR
422927	ETS	T-559	Rewash	11866				4			cp-
526301	Baker c	V 29508	gear oil	11816				3			AR
626319	CES	604	NIHSOLIDE	168				3			A B
7 26328	CES	602	N/H Grlids	168				И	NIC		CP'
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Shift Date Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel Leadman F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior Record all heels to the nearest half gallon. Heel Drum Time Bay Time on Time off Cleaner's Work (gallons) Initials Order No. **Customer Name** No. Unit# **Product Name Process** Request No. Bay Bay څ 12-16 8-1 12 10 11 12 13 14 15 16 17 18 19 20 21 22 23

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Date	2-27-	09	· ·					· · · · · · · · · · · · · · · · · · ·	·	<del> </del>	· · · · · · · · · · · · · · · · · · ·	
Leadman		20	, ·	, ,		Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior						
	the nearest half gallon.				Heel							
Work Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Initials	
124356	Bater	27466	Re coush	71816				1			CP	
224356	CES	270	1241011	168			<del> </del>	5	<del>                                     </del>		D72	
324348	CE3	249	Base oil	11812	<del> </del>	}		3	<u> </u>	-	AR.	
422942	CE3	241	waste certific	1 ( 1 0				3			AR	
524344	SNBC	20520	sul Heid	11213	7.			.5			JE	
624334	2 REK	219561	collex may	16818	1-7016	<b>}</b>	ļ	4			c'pr	
774345	Firebira	344	45000	11.8	-			4			CP_	
8						<u> </u>			ļ		· · · · ·	
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Leadman	4	TL	•						flush, HF - Hol		
Record all heels to	the nearest half gallon.			<del>`                                    </del>					rgent, P - Pres		
Work	•	4 1 2 94 184	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
Order No.	Customer Name	Unit#		8-11-	12	140.	Ivedacei	3	Locay	- Boy	Tillians /
1/24343	Martin	7733	Lube oil Ade	8-11-		<b> </b>	<del> </del>	2	<del> </del>	<del> </del>	100
224340	Global.	31-2	Ollywater	1-11		ļ			<del> </del>	<del> </del>	156
384319	Baker V	527611	Sourwater	8-11-1	2-14	<u> </u>			<b></b>		MC
49-11250	Baker S	V27461	ReRinged	8-11-	12			4		nle	TPR
5/24/321	Baker S	122246	SolomMitale	8-(1				3			JE
6043D	Posto	2154	Renash	8-11-	14			3			JE
724251	KLPat	2798	Way	8-11-	18			4			TRR
92-2828	takes	688	Extanla	14				5			コレ
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Leadman	Amende	,	<del>-</del>			Cleaning F	rocess Key:	CF - Cold I	Flush, HF - Hot	Flush, DI - Di	esel
Record all hee	is to the nearest half gallon.			· · · · · · · · · · · · · · · · · · ·					rgent, P - Preso	·	
Work					Heel	Drum	Time	Bay	Time on	Time off	
Order N	lo. Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
17433	straker_	29034	Re work	1181211	<u> </u>		<u> </u>	17			CP
2 2433	8 CES	271	waste wines	21816				5			233
37433	6 (ESL	1-423	wus to war	118				5	<b></b>		13/5
4 2437	O CES	410	Basevil	218				4			CP
5 243	18 (125	409	W/water	113				3			AR
6243	40 Leecs	775	Fatty Acid	117				6		:	JR
7/11/24	UD AD I	F634	Corbon	118				#		· .	CP
8/24/24	Town to	2798	Wax	118				d	N/	15:	00
97435	perro	1154	Rewich	11188			*	3	N/A		AR
	777	6301	Recoash	1116	·			5			SR
10	- <del> </del>	1000								·	
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Leadman	L	Amenal	<u>,                                     </u>		and the second of the second of					Flush, HF - Het		
		the nearest half gallon.				Heel	Drum	Time	Bay	rgent, P - Presi	Time off	
We Orde		Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1243	24	JAM	318	Lybeoil	11128				15	1		1255
2243	320	Baker	336	vege oil	118		<b> </b>	-	2			CP
3 26	302	Baker	26496	Brine Heuro	11818		<del> </del>		3			#35
4270	129	Firebird	341	Plamaple 1.0	414				12	NIC		30.
676	524 100	The Part	2 4050	Winder Day 100	1 ( )				2			
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Leadman		ゴレ							lush, HF - Hot		
Record all heels to	the nearest half gallon.	·		<del></del>	1				rgent, P - Presi		
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Bay	Cleaner's Initials
124732	CES	252	W. Warter	7-11				5			JL
224327	JAM		Mobil'opus	8/11-	12-			4			JOR
374331	CES	840	Olywater	8-11-	16	<u> </u>		ے ا		<u>.                                    </u>	SE
426398	ETS	7-490	Rinse	7-11-	16-12			3			DE
524337	ETS	543	Rinse	7-11.	-16			_ 5			JU
624326	TILEport	2019	Mix Dottons	8-11		<u> </u>		5			JC
7/24333	685	270	Wiwaler	8-11-				3			JE
824397	(FS	233	W. water	8-4		<u> </u>		84			JPR
924335	Baker SV	29034	Pre- Linse	8-11-	12			34		nc	JPR
10								· · · · · · · · · · · · · · · · · · ·			·
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Lead	man		71	•				-		lush, HF - Hot		
Recort	i all heels to	the nearest half gallon.			<u> </u>					rgent, P - Preso		
	Work		n n new site	Dundant Nome	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
	Order No.	Customer Name	Unit#	Product Name	8-11-1		140.	vednesi	<u>u</u>	Locay	Day	TPL
10	4322	Petro	91024	wbesi].		<del> </del>	<del> </del>	ļ		}	<del></del>	12.
2 6	76263	ETS.	T-705	Rince	9/1-	16		<b></b>	5	<u> </u>		JC
3	22916	Baker	25644	Cruce Hyd.	8-11-16	1-18	· 		1		-	J44
4		Tidepol	1045	Acid Wash	18-	7-11			5			no
5	24223	Polo	1154	Feedstock	8-11-1	2			3/			JE
6	24318	CES	11-848	Base of 1	8-11-	2-16			3		-	34
7	24324	CES	151305	Baseo 11	8-11-	12-16			4/		nc	TPP
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Lead	ni all beels to	the nearest half gallon.								rgent, P - Pres		
Treco	Work					Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
1.	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1	21315	CES	206	Ext wash	11 15		<b></b>	<del> </del>	3,			1111
2		CES	100	Ext wash	1127		<b> </b>	ļ		ļ		GP 1
3	243/6	CES	415	JAA auste	11				4	11/2		20
4		Tidepop	1045	Solveni	111718				2	11/10		27
5	26790	Baker	266	Ditchunier	11818				ب_	1		0+)K
6	2-1317	CES	228	0.14 courses	118		<b></b>		2/			6 B
7	22924	Hart	7152	hubeoil	118		<b> </b>		3			(P)
8	12915	Team	747	6/400	110	-			_5		· · · · · · · · · · · · · · · · · · ·	#1
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Date	2-23-0	<u> </u>	-								· · · · · · · · · · · · · · · · · · ·
Leadman	Armande	6	•						Flush, HF - Hot		
	the nearest half gallon.	<del></del>	<u> </u>		Heel	Drum	Time	Bay	rgent, P - Preson	Time off	
Work Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
122935	Baker	P7297	Receash	118				ul	<del> </del>		CP
222991	Andrews.	7333	Serup Resig	11818	ļ	ļ	<u> </u>	.3	<u> </u>		AX
322947	Inner Plani	5526	Friction	128	<b></b>	<u> </u>		5	<b></b>		37
422950	CES	104	or y waren	118		<u> </u>	<del> </del>	4	<del> </del>	<u> </u>	<u>C199</u>
592937	CES	25%	BUST OF	11128	ļ	ļ		4	<u> </u>		CP
627938	CES	252	mex	128	<u> </u>	-	<u> </u>	5			
721696	KEK	100/2-150	000	11/2	<del> </del>	ļ	<del> </del>	<i>l</i>	<del> </del>		12%
822940	Ligh?	25	0.1	118		<u> </u>		ul	1-7		CP
922939	Team	747	veg-oil	16818			2/	5	A/C		272
10 26 253	CES_	255372	Oil	1188	250	gal-	140	3	NIC		412
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Shift Date	2	-23-9	•	•							
Leadman		71-	•						lush, HF - Het l		
Record all heels to	the nearest half gallon.		·						gent, P - Presq		
Work					Heel	Drum	Time	Bay	Time on	Time off	
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
122939	Team	747	Vego it	8-11.	1503	70				<del>, , ,</del>	JU
2	Tide port	1045	deid wash	18			595		5	1/c	50
122913	Baker	565	Raw propage	8-11-1	18	350	243		4		JPA
12/0253	CTUS	255378	-Lubrizel	8-11-	194				3	- · · · -	JE
6/114	005	235	nothangl	\$7-11	-16				3		75
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Dal			2-31-9		•		Classia D			· · · · · · · · · · · · · · · · · · ·	DI DI		7
	dman	No a second half sellen	-5,0	•						lush, HF - Hot rgent, P - Preso			l
Rec	Work	the nearest half gallon.			<u> </u>	Heel	Drum	Time	Bay	Time on	Time off		4
	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials	]
1	Hadl	nustar	11625144	molassas	8-11				4			52-5	PR
2	2-6203	Andrew	1334	Resin	9-11-	18			4			プレーブ	PR
3	22944	Petroleum	1318	Yubase 4	8-11-1	<u> </u>	<u> </u>		5			AR	
4	22941	Innerplan	1 9028	n/H mod iFl,	18-11				3			JE	1
5	22949		271	Blackoil	8-11				- 7			TE	]
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Leadman	Amarde	?	•						rgent, P - Preso		
Record all neels to Work	the nearest half gallon.	·			Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
122930	PeTVO	107-8	6-5035	118		<u> </u>		5			DK.
2 20257	Andrews.	5100	sel ar Resiv	11818			ļ	4	1-,-		CP
326294	Notex	30464	wastesolid	811810	55	901.	146	4	1/1/0		CP
426215	Baker	P-7243	Porassium,	118		<u> </u>	<u> </u>	5			28
526269	BakeVI	P4040	Pluid	108		<del> </del>	<b>.</b>	5	ļ		57
626399	CES	263	Base oil	118	·	<b></b>		5_	1.1.	:	272
726203	Andrews	73341	Resid	11818	<del></del>	<b></b>		5	NIC	· · · · · · · · · · · · · · · · · · ·	SZ
826244	RFR	259058	wastesolide	1118		ļ		3	M/C		AR
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Leadman	Arman	se							lush, HF - Hot		
Record all heels to	the nearest half gallon.	·		·		<del></del>			rgent, P - Preso		
Work	•		Dundank Mama	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
Order No.	Customer Name	Unit#	Product Name		(gallons)	140.	vedaest	<del> </del>	isay_	Bay	
126205	CES	270	Fuel oil	118		-	<del> </del>	3	<del> </del>		AR
2 26216	Fivebiro	323	Petrolean	168		<del> </del>	ļ	1	1	··	CY
326252	Andreas	1708	Rewash	117		ļ [.]		84	HIC		CK!
476217	CES	29871	waster Solids	11816		<u> </u>	<b></b>	5			0.0
526206	Tidopon	1025	Hxdrocarbox	1184				5	ļ		[5]
626258	CES	222	Baseoil	218				5	ļ		27
726260	CES	249	tolulene	117				5			JX
826239	NolTex	31449	N/HSOLIDS	11816				4			CP
926248	NOITEX	31439	wasteso is	11866				4			CP
10 26188	RER.	259058	Pre Rinsade	1118	· · · · · · · · · · · · · · · · · · ·			3	NIC	<u> </u>	#1
11 26262	chem Pak	543270-	TeTrakis	118				3			270
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Date	2	-19-9			•	<u> </u>	·.				
Leadman		<u> </u>	•						lush, HF - Het gent, P - Presc		
	the nearest half gallon.	<u> </u>			Heel	Drum	Time	Bay	Time on	Time off	
Work Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
122931	CES	271	oilywater	8-11-1	6			5			TC
226261	Firebuld.	346	MIBENIShe					4			JAR
326288	RUR	259058	011	8-11				3_		1/0	JE
422934	Burbank	32127	01/	8-11				5			76
5	875	351	Lealeen	7-11				_5		!	JC
626252	Andrews	1708	Rinsed	8-11				_5			JC
722922	CE5	206	Lubeon	8-11-				4	· · · · · · · · · · · · · · · · · · ·		JPR
822933	Enviro	103	Lightenes	8-11	155	J. S.		4			JPR
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Lead	ฑลท		@ JU	•				Process Key:				
		the nearest half gallon.			<del></del>	·		Steam, C - Cau				
$\neg T$	Work	•				Heel	Drum	Time	Bay	Time on	Time off	
C	order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1/2	72943	Tidepost	1019	JP+8	8-11		<del></del>	<b>_</b>	5			DL
2 5	2945	Tibeport	3007	58.8	8-11			J	ے ا			JE
36	-6400	Durenied	370	n/H Waste	X-11				4	<u> </u>		JPR
48	-6262	ITS	6301	Red Ink	9-11:	29	Pump		3_		<u> </u>	JE
50	4244	nottex	RB 30464	wosteso1.25	8-11-	16			4			TPR
6	10203	Andrews	7334	Resin	9-11-	18		ļ	des		nk	JL
76	4004	nustar	NB 2514	Molassas	8-11				5	·	nc	JL
8						<b></b>						
9			·						-			
10					<u> </u>							
11	7 (1) 7 (1) 7 (1) 8 (1)		·									
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Date Leadman		プレ	,				rocess Key:				
Record all heels to	the nearest half gallon.						steam, C - Cau				
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner Initials
126001	Andrews	7522	Warrants	8-11				5			JL
226279	RYR	279008	MIH waste	8-11-	16-18			4			JPA
32/0202	ゴイン	6301	Ink	9-11-	12	·		3		nle	JE
486207	EES	259	Olymales	8-11-	16			_5_			JL
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Date	2-18-09	7				r			· · · · · · · · · · · · · · · · · · ·	<del></del>	
Leadman	Armanda								Flush, HF - Het		
Record all heels to	the nearest half gallon.	·					·		rgent, P - Preso		,
Work	•				Heel	Drum No.	Time	Bay No.	Time on	Time off Bay	
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	140.	Request	<del></del>	Bay	Day	Initials
126247	Firebird	310	CUTTEN STOCK	168		<u> </u>		3			AR
2 12923	Pervo	1318	hube oil	11128				5			IK
326243	Balery	28996	/ Oil	118		<u> </u>	ļ	9	<b> </b>		X/
426304	815	T-305	Rewash	717	7		<b></b>	5			SK
526254	Phinies V	7-1	Oilxunter	118				3_			27
626251	CES	466	methanol	117				43	-	· · · · · · · · · · · · · · · · · · ·	100
716303	allovia	T-81	chloring	118			<b> </b>	<del></del>			A K
826218	TidePan	1045	Solven	7284				4		······································	CE
926249	Baker	28183	[austic	118				5,	-		
10 16 2-16	CES	30447	waste 50 hd	576816				4	10/0	<u> </u>	
1126701	Andrews	7522	130	117	· · · · · · · · · · · · · · · · · · ·	· ·		5	NU		ح الأ
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Leadman		5L	· · · · · · · · · · · · · · · · · · ·				_		lush, HF - Hot			
	the nearest half gallon.			<del> </del>	<del></del>				gent, P - Preso			4
VVork Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials	
106236	Tidepost	1085	Wax	18-11-1	75	gils		4			SPR	1
206245	CES	224	Black Oil	8-11-	10			5			JL	
396237	CRS	406	Dasc oil	8-11-	10			5			JL	
426240	FIX	497888	Turbo Flo	9-11-	18			5			JC-J	PA
52-2922	CES	259	Waste Flam	8-11		<u> </u>		_3			JE	1
626248	-CES	270	hoste Flam	7-11		<u> </u>		3			JE	
7	Petro	1207	reclean	8-11-1	6	ļ		3	·		15	
8	Daelimore	0 Kg v 24			1-16			4			JPR	
976247	FIREBITC	310	Culterstock	7-11				3		n/c	JE	-
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Date	7 -17	-09		•	-		· · · · · · · · · · · · · · · · · · ·		·	,	· .
Leadman	arman	La -	· -						lush, HF - Het		
Record all heels to	the nearest half gallon.	1	r	<u> </u>	1 111				gent, P - Preso		
Work	O dans an Alama	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's
Order No.	Customer Name		1		(8=====			3	<del> </del>		772
11	( = 3	100	Ext wash	112		<b>_</b>	<b> </b>		<del> </del>	<b> </b>	130
2 26.326	Trimac	470010	halex	111318	<b>8</b>	<u> </u>		_3	<del> </del>	<u> </u>	Vt.K
3 26220	Tidefori	1048	Discl	2184	Ĭ			٠(			1
47/278	RFR.	254796	Calierum war	119				5			572
511719	30.55.3.1	6200	erude oil	118				5			JR
67173/	Tideson	1085	Wax	11818			·	4		nle	CP
7/27/1	D.6 MA	615	wate solick	ier				2			JP
1/2/09	1021147	(4)									
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Date	2	-16-9	•								-
Leadman		52	•				Process Key:			• .	
Record all heels to	the nearest half gallon.			<u>i                                      </u>	1 (1		Steam, C - Cau				
Work	•	i siite dk	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
Order No.	Customer Name	Unit#		9-11-1	-		Plo	5	Jay	Bay	HIMOIS
126233	FIX	103	Turbo Flex	<del></del>	T-	45	170	3		<u> </u>	100
226326	Tomac.	470010	La-lose	9-11-1	1 .	<del> </del>				n/c	UZ
321224	CES	226	011	8-11-1	6	<u> </u>		5			JC
4221910	RYR	- 4 v	nats	8-4	-11			4			5PR
5/22691	RUR	3	mers	4	-11			4			DPR
626235	CES	251	W-water	7-11				5			Ji
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Date Leadman	J-16-09	5					_		lush, HF - Hot rgent, P - Preso		
Record all heels to Work	the nearest half gallon.				Heel	Drum	Time	Bay	Time on	Time off	Cleaner
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
126326	Trimac	47-0010	ratex	11/3/8	8			3	NIC		HA
2 26226	Didelon	1052	Diesel	1184				5			JK
3 26227	Bullzeye	534	crude oil	118		<u> </u>		5			JB
426224	Tidopon	1099	Transmia	1184	<b>a</b> .			5			JR
526358	Baker	21341	Survoil	<del></del>	86			2		JA	BY
626314	Baker	24133	Slary oil	1112-81	6			_1			y 13/4
7/2/321	Baker	29330	Sluvy 01)	111286	6			2	·	23	1314
8 26 359	chem Pak	1941	wax	118				41			CP
922703	TidePori	1051	Diesel	1184				1			<u>ep</u>
10 26231	CEC	256	Oilxweller	118				5			
11 22700	CES	265	Base oil	118				5			IX,
12 22705	Timer Plani	7145	oily was to	12.8			· · · · · · · · · · · · · · · · · · ·	5			JR_
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Da			-137				Cleaning I	Process Key:	CF - Cold F	lush, HF - Het	Flush, DI - Die	esel
	adman	the nearest half gallon.						Steam, C - Cau				
Rei	Work	the measure item 82.			·	Heel	Drum	Time	Bay	Time on	Time off	
-	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1	26397	CES	2035	SUFURIACIO	8-11	55 90			3.			15
	26309	RUR	25-9025	Oil	8-11-1	<u> </u>			4			TPR
	26221	JAM	318	Lube 011	8-11-		<u> </u>		3			JE
<u> </u>	21,222	CES	263	Light Ends	8-11-	16			3			JE
	14727	CBS	104	W. Water	8-11		l		5			00
	0-6350	Miller	91-5088	Resin	9-11	300	955 5°		5		n/c	JL
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	dman	V +								lush, HF - Hot		
Rec	ord all heels to	the nearest half gallon.								gent, P - Preso		
	Work	· ·		Dundant Name	Oronogo	Heel (gallons)	Drum No.	Time	Bay No.	Time on	Time off Bay	Cleaner's Initials
	Order No.	Customer Name	Unit#	Product Name	Process	(समाणाड)	ING.	Request	NO.	Bay	Day	(D)
1	26285	Baker	6271	PUSIY WASON	118		<del> </del>		4	<u> </u>	<b> </b>	100
2	2678D	Baker.	3205	Trushine Fue	2 718				3			12 16
3	22884	Baker	21073	Sjudge oil	11812		<u> </u>		5			DJS
4	22806	CES	266	WISTE WITER	128		<u> </u>		4			CP
	2810	150	410	Base Dil	118		<u> </u>		3		CP	AR
- 6	26305	Truckfloni	60114	rube of	118		<u> </u>		5,	NIC	:	JR
	11856	CES	6731	Exi wash	1116		<u> </u>		M	NIC		CP.
<u> </u>	26306	473	7-444	Re oush	1171	<u> </u>			_5_			32
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eadman		びし	•						lush, HF - Hot		
Record all heels to	the nearest half gallon.			<del> </del>	Heel				gent, P - Preso		
Work Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleane Initials
121,295	Baker M	x3234	Piekinsed	8-11-1	>			4			JPR
226390	CES	259	Resin	9-11-	16	55		3			JE
326384	E75	T-641	Rinse	7-11-	16			_3			JE
4228118	Global	51-2	Ollynater	8-U		<u> </u>		41_		,	JPR
526388	CES	416	Lightals	8-11				5			77
626389	TAM	317	Whe oil	8-11-	12			4			JPR
722628	Baker	1623	EXY ONLY	15				_5_	<u> </u>		JL
826299	CES	235	mothano!	8-11	ļ	55 dri	~- <u> </u>	3			JE
926296	CES .	UT878	Toulene	8-11-	16			3			35
10 26297	CES	21/3	DIGWALER	8-11				3	·		<u>U</u>
1126385	Petro	UT-1:104	Reclean	8-11				_5			サレ
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ate	2-11-	29		•		Cleaning F	rocess Kev:	CF - Cold F	lush, HF - Het	Flush. Di - Di	esel
eadman	He against half gallan	······································							rgent, P - Presc		
Work	the nearest half gallon.	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	
Order No.	Customer Name	198951	100001	11.128				3			AX
122335	Baker	1 + - (	Voruge on	11168	le 13	<u> </u>		5	1		10
276278	B F K	259809	COASTE WALL	11.0		<u> </u>		1	<del> </del>		1
326292	Baker	60 7071	WUSTE WAY OF	1/0							55
426282	REK	155188	Oct _	11.				4	<del> </del>		
526191	RFR	23-132	waste work	1118				5	<b>-</b>		12 /
6 26294	CES	256	Feed STock	118	·	ļ		_5	<b>-</b>		275
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Shift		-70-9		. •	1						- /
Date Leadman	<i>&amp;</i>	51-	•			Cleaning P	rocess Key:	CF - Cold F	lush, HF - Hot	Flush, DI - Die	esel
	the nearest half gallon.		• 	·	·				rgent, P - Preso		
Work				·	Heel	Drum	Time	Bay	Time on	Time off	
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
126387	LBES	2165	Fathy Acid	8-11				5			56
226286	JAM.	3318	Lubeoil	8-11-	12			4			JPR
326287	ETS	T-444	Polro Dist	8-11-	12			4			JPR
4 26289	CRS	105	Rined	3-11	<u> </u>			.5			ゴム
521.2240	Trimae	470010	tales	18				3		Ajc	JE
622335	naker	19 8951	W. Water	18	360	als		0		nc	SE
7/22789	RUR	717	spill quar &	8-11				2			<b>プー</b> 0
926315	CES	VA 2523	11/4/80 (125	8-11				2		٤.,	JAV-1
922618	CR3	6731	MEK	8-11-18	1			5			ゴレ
10 2 6385	Pelis Exp.	LT 1104	Lubeoil	8-11-	12			H			JPR
1121283	Inner Plant	2346	Who Add.	8-11-18	<u> </u>			5			サン
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ate		2-12	-09			Cloanina P	Process Key	CE Cald E	lush, HF - Hot	Short DI Die	
eadman_	to the propert half-railors	-50							gent, P - Presq		
tecord all heel Work	is to the nearest half gallon.	T			Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order N		Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
12630	Therplant	60114	InFinern	8-17	<u>.</u>			5			TR
22280		104	nacha	8-11				.5			JPE
3226		10731	met	8-11-	1816			4			JU
4263	OUR4R	260724	w: Amud	8-11				3		•	JE
5 2631	Andrew Co.	266		5		,		_3			JE
6	CB2	17878	Reclean	8711				<b>フ</b>		÷	JE
72635		270	w. water	8-11-	16			5			プノ
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Leadman	Amana	10	•		•				lush, HF - Hot		
	the nearest half gallon.			<del></del>	Heel				rgent, P - Preso		
Work Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1126357	PETVO 20	-794		718				5			JR
222812	ET3	T-459	Rewash	11716			ļ	4	ļ		CP:
3 26341	miller	124069	Resin	11/38	18	-	-	3	ļ		AR.
4 277 00	RER.	5-4"	Hose	118	<u> </u>	<u> </u>	ļ	2	1, 1	07	= 23
5 26309	RFR	259015	0.	11872				4	A/C		09
626331	Instiuform	124154	Rasin	11813	18		-	-5			2 Z
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Date		2-14-09 Armando			. "		Cleaning F	rocess Kev	CF - Cold F	lush, HF - Het	Flush. Di - Die	esel
Lead	iman Mali baek to	the nearest half gallon.	<u> </u>	• • <u></u>						rgent, P - Presc		
	Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	6298	Andrews	1888	Rewish	117			<u> </u>	1			CP
2	11202	CES	205	Westerna	118				top	ļ		2
	26350	miller	91-3088	12.0511	11138	18	·		5			572
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Leadman	Arman	do	•						flush, HF - Hot		
	the nearest half gallon.			<u> </u>	1				rgent, P - Pres		
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
126281	CE3	105	Di ywwer	118				A.			CP
226377	CES	409	olycenter	118	1009	<del>21</del>	雅	_5_	ļ		JZ
322788	KFK	239325	WOSTE WATE	1181	B			3	<u> </u>		AR
426337	Hilled	7281	crude oil	1117 8				5			2 15
5 26380	CES	270	of Inwaley	1/8		<u> </u>		4	1//2		CH
626326	Trimac	17-0010	botex_	128				3_	N/C		#15
716383	TidePart	105	Peiro Dist	1181		0	,	5	-		3
8 26382	CES	105	Dig out	11.18	2009	e1. R	10	1			2 D
9	& T.S.	593	REwash	11816			· · · · · · · · · · · · · · · · · · ·	7			CP-
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Leadman		JU_	•				Process Key:			•	
	the nearest half gallon.	· ·	<u> </u>		Heel	Drum	Steam, C - Cau Time	Bay	ent, P - Presq Time on	ive, Ex-Exter	cleaner's
Work Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Cleaner: Initials
1762410	Baker S		pilsic Acid	8-11				380			JE
26274	Jan	319	Dil	8-11-1	<b>D</b>			4			TPE
26278	drem Pack	94219	-0 PEG	8-11	45	gais		4			TP.R
127857	4009 Tide	2017 10	9> Wax	8-11-	18			5			JL
5210349	CRS	1264	Flam. I goid	8-11-	12			5			JU
626277	RUR	265019	The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s	x-U				3		÷	JE
12278x	RUR	239325	011	8-11-18	200	sals		3		nk	JE
822620	CES	VB2574	n/HSluda	2 8-11				2			JAY-1
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Work   Order No.   Customer Name   Unit #   Product Name   Process   Heel   Drum   Time   Bay   Time on   Time on   Bay   Time on   Bay   Time on   Bay   Time on   Bay   Time on   Bay   Time on   Bay   Time on   Bay   Time on   Bay   Time on   Bay   Time on   Bay   Time on   Bay   Time on   Bay   Time on   Bay   Time on   Bay   Time on   Bay   Time on   Time on   Bay   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Time on   Ti	Leadman		<u> </u>	•				_				
Order No.   Customer Name   Unit #   Product Name   Process   (gellons)   No.   Request   No.   Bay   Bay   Initial   124268   Creen Pate   2254   Creental   Get HITE   No.   Creental   Get HITE   No.   Creental   Get HITE   No.   Creental   Get HITE   No.   Creental   Get HITE   No.   Creental   Get HITE   No.   Creental   Get HITE   No.   Creental   Get HITE   No.   Creental   Get HITE   No.   Creental   Get HITE   No.   Creental   Get HITE   No.   Creental   Get HITE   No.   Creental   Get HITE   No.   Creental   Get HITE   No.   Creental   Get HITE   Creental   Get HITE   Creental   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE   Get HITE	Record all heels to	the nearest half gallon.		<del>,</del>	<del></del>							
126288 CNEMPRE 7254 CYRETAI CREMITS W CF 216374 Chempark 1799 CYRETAI CREMITS 32675 LEE'S 2285 TRII OIL II 8 32675 LEE'S 2285 TRII OIL II 8 42912 Bakev 18 28143 Asphalt 11173 2 18 4 526376 Phinix ex UT-1 Oil yutter 114 3 18 4 626375 Prix chev 70 28 malex 118 626375 Prix chev 70 28 malex 118 72769 1804 per a Trust 56 Tu Solide 1180 1 118 916274 JAM 319 OIL 118 4 W N/C CP 912853 Tideron 1093 Wax 1618 5 Tu N/C TR' 10 11 12 13 14 15 16 17 18 19 19 20 21 22 23		O	فالشائد بط	Braduat Nama	Proces							
11/268 Chem tak 1254 Crisial Get 11/28 21/2574 Chem park 1799 Crysial Get 11/28 32/275 Lee's 2185 Tall oil 11/8 32/275 Lee's 2185 Tall oil 11/8 47/2912 Bake V R 28143 Asphalt 11178 2 R R 67/376 Phimies VT-1 oil ynatur 114 3 R R 62/375 Rirschev 7028 palex 11/8 72/769 100 yne a twre156 (a) solide 1180 10 10 10 11 11 12 13 14 15 16 19 20 21 22 23	Order No.					(genores)	140.	Ticquest	1.7	1	1 303	
3 16275 Lee's 2285 Tell oil le 8 4 12912 Baker 8 28143 Asphalt 11128 5 26376 Phimier VT-1 oil ruster 114 6 26375 Kirscher 7028 holex 118 7 12769 People was 56 la solide 1180 8 26274 JAM 319 oil 128 9 22853 Tidelon 1093 wax 1618 11 12 13 14 15 16 17 18 19 20 21	126768	cnempab	7	7		ļ	<b> </b>	<del> </del>	1			5
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5 26376 Phimies VT-1 01 ywater 114  6 26375 Kirscher 7028 palex 118  7 22769 People Trans6 W 50 lide 1180  8 26274 J A M 3 19 0il 119  10 11 12 13 14 14 15 16 16 16 16 16 16 16 16 16 16 16 16 16	3 26275		2285	TAR OIL	12 8		·		3			AR
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9 2353 Tidepon 1093 wax 1(18 5 N/C 57) 10 11 12 13 14 15 16 17 18 19 20 21 22 23	772769	18040PGT	XVB 156			2			L	1		2. B.
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。"  "我们是我的,我们就是有什么,我的你说我,你就说我的,我就就有什么,我们,我说了。"    我多一样,我们就会看到这点点,我想见过一样的。我们的心里的	1			· · ·								
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Leadman		37-				Cleaning P	rocess Key:	CF - Cold FI	ush, HF - Hot	Flush, DI - Die	sel
	the nearest half gallon.		•	<u>.</u>			iteam, C - Cau				
Work				·	Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
126354	Phonies	593	IP A Valer	8-11		<u> </u>		3			SE
22-6267	CES	2815	Wisales	8-11				83			JE
3 26313	CES	249	Lubeoil	8-11-	12-16			\$ 4			50
426312	CES	228	W.W.	8-11-	16			_5			77
5	CES	217	Rinse	top 11	-3			٠. ک			JE
626349	CES	12-64	Flam. Ligards	2-11				5		-	JL
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Leadman		つし	•		,	, -	rocess Key:			•		
	the nearest half gallon.		<u> </u>	<del>1</del>	Linei		Steam, C - Caus				rior Cleaner's	4
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	lnitials	
126338	Tidepost	1010	Decah yeronge	ht olene	8-11			3			DE	1
296343	-Enresplant	5621	Intineum	8-11	·			3			DE	1
3 2 6344	Defro FXP.	1207	WasterNorter	8-11-	12			ري ا		-	JE	]
42-6339	CES	274668	Plant Trash	8.11-	10			4			SPR	
526334	Daelimore	OKOV24		thable	8-11			4			TPR	].
626335	Polar	803820	Oil	8-11				95			O R	134
72-6342	Blentech (	K002400		plele 8	-(1			5			JC	
8 8 6336	CES	419	20ch Stream	8-11				5			ってし	
976351	CES	259	Wow.	8-11				٠			JL	1
10 26345	CES	1.05	n/H Sludge	8-11				4			JPR	1
112 6347	CES	255	CES	255				4			JP-6	2
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Date	26-1	5,9	-						· · · · · · · · · · · · · · · · · · ·		<del></del>
Leadman	Amano	<u> </u>	•						iush, HF - Hot I		
	the nearest half gallon.	<del></del>	<u> </u>		Heel	Drum	Time	Bay	gent, P - Preso Time on	Time off	Cleaner's
Work Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
126332	PETVO	688	hube oil	11128				3			ARI
216330	CES	271	Oilycuster	1/8				3			FR-
326327	Baker	29004	crudeoil	1128				5			2
4 26368	Baker	18998	crude oil	11178				0			CP
5 16333	CHneider	21977	waste water	11 \$				5			JR
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and Shift Date Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel Leadman F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior Record all heels to the nearest half gallon. Time on Time off Heel Drum Time Cleaner's Bay Work **Product Name Process** (gallons) No. Request No. Bay Initials Unit# Bay **Customer Name** Order No. 5 8-01 2 8-11-16-10 2 085 3 3 3 8-1 11 12 13 14 15 16 17 18 19 20 21 22 23

Shift _	L				1						
Date	2-5-0	9		•							- "
Leadman	Armen	do							lush, HF - Hot l		
	the nearest half gallon.		r	<del></del>					gent, P - Preso		
Work	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
Order No.	Qualifier Name	318		218	(ganoria)	1	request	110.	Day	Bay	Tillers
10077	2 77	279	LUBE OII	118				9			26
226316	5500	2-3-1-	BOILER	1118				4_	<del> </del>		1
326396	PETYO	794	BRAKEPLUID			<u> </u>		<del>-</del> <del>-</del> <del>-</del> -		<del>-,</del>	12/2
422917	CES	271	Red Resin	118				2(,			2
526391	RFX	259321	water fist	118				4			CP
622618	CES	6731	mek	11818				5	1/10		778
726369	TEPPCO	945537	orude oil	118				4		·	CP
81/377	CES	128	MEK	118				el			OP
926325	CES	233	Resin	118				5			JP
10/20/919	Baker	1929	crudeoil	118				3	NIG		A 17
1126318	Texas			118				5	NIC		50
12 2/237/	Devi Truck	1625d	1 PTUF 6005	114		·		4			CP
13				1							
14											
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17	<del>                                     </del>										
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Le	adman	Armana	60	•		**				Flush, HF - Hot		
Re	cord all heels	to the nearest half gallon.			1	111				rgent, P - Preso		
	Work		11:24:44	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
	Order No	. Customer Name	Unit#	· · · · · · · · · · · · · · · · · · ·		(gallons)	NO.	wedgest		Cray	Lay	Tilliais
	12277		1244	Alcohol	118		<del> </del>	<u> </u>	5,	<del> </del>		12/5
	272765	-Baker.	28985	Diesel	118	<del></del>	<del> </del> _	<b></b>	-/	ļ		CP
: :	32292	Baker	26498	Diesel	118	ļ	ļ		.3,			A.R.
	122771	Baker	3345	Diesel	128				u.			CP
-	526365	Global	ST-2.	oil y warer	118				5,			5/12
	1263	1 Firebird	319,	crudeoil	119				4		:	CP
	79236	RFirebird	346	Fuel oil	119*				_5_	·		JR
	8 2288	Baker	22150	Pre RINSA	128				3			HX
	9 2291	4 CES	204	waste waser	114				U	, , ,		CB
1	01636	6 CAS	70131	markol	118				u	N. 6		OP
1	1		<u> </u>									
1	2							<u> </u>			·	
1	3		<u> </u>						···		· ·	
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Date			1-4-9							·	·	
Lead			JL							flush, HF - Hot		
Recor		the nearest half gallon.	<del></del>			Heel	Drum	Steam, C - Cau Time		rgent, P - Pres Time on	Time off	
	Work Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	Bay No.	Bay	Bay	Initials
		Cugon	DC5FB	carbon	8-11				H		<u></u>	JPR.
-16	16395	JAM.	318	inhanil	8-11-1	h_		1	5	1	NC	1-5/
20	26394		P7297	Wart Water	8-11	<b>5</b> 5 ⁻⁹	a G.		5	<del> </del>	1	32
_3	2887	Baker	1011			1 1			7	<del> </del>		145
4	76367	CES	274226	Mon Hoz. Solice	3 8-11	-16		<del> </del>	7	<del> </del>		UE
_5	40393	CES	2-60	W- Water	8-11					ļ <u>.</u>	<del> </del>	JE
6	22-911	ETS	7-351	Ext. Wash	15		· · · · · · · · · · · · · · · · · · ·	ļ	5		:	JZ
7	26366	CAS.	70131	markol	8-11				4	<u></u>		JPR.
8	22918	RUR	265543	Testwater	8-(1				3			JPR
9	22628	Baker.	162350	c Cutter Stock	8-11				4			JPR
10	22771	Baker	G37950	1 Marine Diese	1 8-11	·			3		<u> </u>	JE
	22915	RUR	241979	H550	8-11.				4			JP.R
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13		20										
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Shift	2-3-0	9	• •					·			
Date			•			Cleaning F	rocess Key:	CF - Cold I	Flush, HF - Hot	Flush, Di - Di	esel
Ceaurier:	to the nearest half gallon.		•		:	F/S - Flush/S	iteam, C - Cau	stic, D - Dete	rgent, P - Preso	ive, Ex-Exte	rior .
Work	` .	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's
Order No		318	hube oil	2 8				d			00
122621	J. H. W.	310	have on	128	17 2			3		i	20
2 2262	4 FS	12776	Diesel	116		1.	<del>                                     </del>	5		•	K 2
3 7176	4 10	AFIRE		1/8				5			7
42262	Lees	935	Tanoil	110		<del> </del>	<b></b>				7 %
5 22621	ACES_	270	contic	118		<del> </del>	}	3	-		#
622760	Pervo	680	waste com	<del></del>	<u> </u>	<del> </del>	<del> </del>	5		· · · · · · · · · · · · · · · · · · ·	一分
7 22894	Baker	24573	coralyst					5,		· · · · · · · · · · · · · · · · · · ·	7.10
82162	6 CES	205	crude oil	11128	r of	Drum		-7		· · · · · · · · · · · · · · · · · · ·	1 D
92262	Tidepon	1099	DETYO NOPIN	1184				_3			IX.
10		ļ·							<b> </b>		
11		<u> </u>			·					· .	
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)ate						Clareles II	manan Kaur	CE Cald E	lush, HF - Hot	Throb DI Di-	
eadman		-04	•						gent, P - Presq		
	the nearest half gallon.	i i			Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Work Order No.	Customer Name	Unit #	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
126391	Baker		Macine Diesel	8-11				5			JL-J.
222899	Baker	SV28984	ceital for Kesed		655 8			4		·	J1-J
322766	CES	104	Harwates	8-11	1.			3			JE
422809	Action Fes.	7-543	gasqualer	8-11-	12			<u>3</u>			0P
57749	restroker.	17-1028 DC5F9	Carbon	8-11	1			$\vec{z}$			7/-7
670168	cagon	243	Methano 1	7-14-	10				,		びとう
822765	Bakel	SV28985		8-11				4		nle	72 - 7
922920	10 10	5126198	marine Disch	8-11				3.		n/c	SE
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Date		2-2-9						<del> </del>	· · · · · · · · · · · · · · · · · · ·		<del>-</del>
Leadman		77							lush, HF - Hot		
	the nearest half gallon.		·						gent, P - Preso		
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
122-808	Aurts	7152	Lube oil	8-11-	2		1	14			CP
222667	RUR	24410	Hydrolico!	8-11-	12			4			JL
3 22767	Baker	SV22726	Marine Diesel	8-11			·	5		nle	JI
482762	Baker	SV28976		8-11-	12		:	3			JE
522759	JAM	T-351	011	8-11				3			JE
622906	Innesolar	2355	Intineum	8-11				3			JE
722-1012	CES	6731	MEK	18*				3		orle	かし
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Date	2-2-0	9				Classica		OF Cald	lush, HF - Hot		
Leadman	the standard		•				-		rusn, Ar - Act rgent, P - Presc		
Record all heels to Work	the nearest half gallon.	·			Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
122804	175	205	wiste won	118		<b> </b>		3			AR
222805	CES	270	oil y wayed	118				.3			AR
3 27832	975	T-468	Rewish	11716	<u> </u>	· -		2/			272
422802	milstoad	B-10	oil y water	118				3			AR
5 82867	ETS	T-363	Re wash	117			ļ	.3			AR
622803	ANDRECUS	1710	Rewash	117				H	17		CP
722618	CES	6731	MEK	11818				5	N/C	·	JR'
812906	Inner Man	2355	Infineum	117	<b>.</b>			3	NIC		AC
922619	PETVO.	162	Pump	118				_3			24.78
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Leadman	primary		•						flush, HF - Hot		
	the nearest half gallon.	T	1		Heel	Drum	Time		rgent, P - Preso	Time off	Cleaner's
Work Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	Bay No.	Bay	Bay	Initials
1/20773	PFS	241		118				4			OD
221614	CES	260	MEK	114	:: -			5			572
370890	Baker	18999	COLONST	118			·	3			TP
12265	Tideom	924	Pamp Slur	V 119				5			7.2
577619	CES	235.	methanoi	113				5			Sm
622617	CES	HOGE	12-3"2-2"	11818				3		:	AR
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Date			30-9 TL			the same to	<u></u>					
Leadn			りし!	•						Flush, HF - Hot		
		the nearest half gallon.		· · · · · · · · · · · · · · · · · · ·	<del>                                     </del>	Heel	Drum	Time		Time on	Time off	cleaner's
	Work rder No.	Customer Name	Unit#_	Product Name	Process	(gallons)	No.	Request	Bay No.	Bay	Bay	Initials
12	2801	CES	258	Black oil	8-11				3	<b></b>		JE
22	2909	CES	233	Toulene	8-11				5			127
32	2613	M-Isled Eng	033	Disel Swater	8-11		1.10		4/			BCP
42	2866	Baker	5129013	Wastewarler	8-11	558			4			CP
52	2910	Southcoast.	0169	0,1	8-11				3		, ,	すど
62	-2859	Tideport	7-448	Way	8-11-1	8	2 ( )		<u> </u>			ナビ
72	2843	Baker	5122246		8-11:	55.8						<del>ا</del> ک
82	-2 749	LEES	2115	FuttyAcid	8-11				4			CP
92	2616	CES	249	W'Water	8-11		. (5		3		10 /	JE
10	2848	Baker	SV 28999	catalyst	8-11	55-5			5		nc	JL
11										- 1		
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Date		1-30-6	7				Classica	Democra Marie	OE 0-14	Flush, HF - Hot	Elizab Ol Oi	
Leadman	1	Arman	do					-		riusn, rir - riot rgent, P - Presc		
Record all h		the nearest half gallon.	T			Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Orde		Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1228	61	1 hem Pak	25 73	1eix	118		<u> </u>		3		<u>-</u>	HK
2227	98	610bal	311#1	oily whier	118				3			ARY
3228		RFR	259045	waste water	118		<u> </u>		5			5 R
4129		CES	260	oilywater	118				5			DX:
5 279		CES	228	oily word	118				5			JR
6129		Tuner Plant	7145	oil	168				5		: 	JR
7229	902	CES	221	wostewater	115				3			AR
8225	291	TidePort	1501	Rewash	1134				5		·	5721
9178	262	ETS 7.	697	Re wosh	11.7				2/	1 1		CP
10 22	199	1-ee's	2115	faitx Aeid	118				d	NC		CP
11225	359	To depon	7-448	WAX	1118				3	NCE	CP	AR
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		Ind	<b>ULU</b>	- Other contracts							
Shift		19-9	•	•							- 14 J.
Date		-17		•		Cleaning F	rocess Kev	CF - Cold F	lush, HF - Hot	Flush, DI - Die	sel
Leadman	o the nearest half gallon.		•		* · · · · · · · · · · · · · · · · · · ·				gent, P - Presq		
Work	Julie Medicer Hair games.				Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
122897	RUR	239632	Waste water	8-U				13			JE
272900	Inner Plant	5666	Diesel	8-11	-			5			7/
322833	Enviro Sol.	103	Low Flush	8-11	350	CP		5		-	した。
422864	RHR	239049	Waste water	8-11		l		<u>S.</u>			ブノ
572860	RYR	239045	notwater	8-11			<u> </u>	-5		NK	J2
62-290	CES	104	Jindal Water	\$7-	i (					:	JE
72290	1 CES	243	Waste hate.	8-11				3	·		JE
822904	(6)	239	EVINYLACE			<u> </u>					JE
922861	Chem Pack	2573	gel	8-11-12				<u></u> 4		16	CP
10											
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Shift	) [		•						*	•	
Date	1-29-00	7							<del></del>		· .
Leadman	Armonde								Flush, HF - Hot		
Record all heels to	the nearest half gallon.		r	<del></del>	111				rgent, P - Preso		
Work	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
Order No.	O TOO	714	austewater	19 01		*		3			AR
117895	177	<del></del>	Lube Dil	11128		<del> </del>					50
227836	(ES	6731		1/8				3			120
3 22856	CES	233	Or LAMORA	169		<del> </del>	<b> </b>	3			4
471896	GES	235	MEE.	114				3	-		AK
522868	ETS	T415	Rewash	1.716		<b> </b>		3	ļ		AR
6 22857	retro_	1046	hube oil	71128				5,		:	22
722863	TidePan	1077	248	1184				4	1 , 1		CP
822861	Chem Pak	2573	Wax	11818		<u> </u>		U	1/ /4		CP
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Date Leadman		-08-61 -00	•						lush, HF - Hot		
Record all heels to	the nearest half gallon.		<del>,</del>						rgent, P - Preso		
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's
1122879	FIREBIRD	347	Gasoline	8-17		<u> </u>		3			JE
222599	Baker.	PSV0201	of Muchater	8-4-16			ļ	3			TE
122890	CES	N48040	Reg. Warte	8-11-	ie	<u> </u>		4			CP
422892	Inner plant	60114	Dibit AHY Stage					2			CP
522XXI	CES	N48124	Reg-waste	8-11-	16			3			JE
622891	Tiseport	1501	Rinse	7-11				3			-51
1722886	Inverbla	nt 2360	ylene	2-11		<b></b>	<u> </u>	5	· · · · · · · · · · · · · · · · · · ·		JU
1822489	Chempack	2254	Lecleon	8-11			ļ	5			I
9	CES	235	Methanol W.	7-11				3			PES
10			<u> </u>								
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Leadman	mas	ndo			• •				riush, Ar - Act ergent, P - Pres		
Record all neels to Work	the nearest half gallon.			1	Heel	Drum	Time	Bay	Time on	Time off	
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1 22882	CES	2771	uneto solide	11818				3			AR
271849	CEC	2770	wassesolide	11816		ļ		9	<u> </u>		127
322876	tidePort	2017	rube oil	1184				5			572
422873	chem Pake	942195	wix	2.8		Drum		3	<del> </del>		AR
5 22881	(EZ N	48124	waste 50 lines	11816				4	NL	-	CP
622872	K.C.	2254	ciax	128				5_	WC_	:	TR
7				*				<u></u>	· · · · · · · · · · · · · · · · · · ·		
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Leadman		<u>JL</u>					Process Key				
	the nearest half gallon.				1 111		Steam, C - Car				
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
12200	Imerplant		Danwaler	8-11				3			12
222874	Fredird	347	Basoline	8-11				3			JE
322875	CKS	274824	class#501.65	8-11-	14		•	3			15
40-2072	KL Chem lad	2354	chystalact	9-11-1	<del> </del>			3			57
522852	K. ndermorgan	N-165	poTReg	8-11-10				H			CP
62-2854	CES	2769	Resulated	8-11-1			<u> </u>	14			CP
722594	Baker V	b 25991	Slumy oil	8-11-	12-16			4	·		CP
302878	CES Y	8 25124	waste Studge	8-11-		<u> </u>	<u> </u>	5			72
922841	EUR.	2-3778	0.1	8-11-1	<u> </u>			5		-	JZ
10 22883	ces	243	w.water	8-11-				5		· · · · · · · · · · · · · · · · · · ·	乙
		· .									
12	<u> </u>										
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Date	1-27-0	9	•				·	<del></del>		·	· · ·
Leadman	Armand	0							Flush, HF - Hot		
	o the nearest half gallon.	<u>,                                     </u>	T	<u> </u>	1 117				rgent, P - Preso		
Work Order No.	` .	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
122698	Delho	LF1276	oilxienter	118				5			JR
211500	Baker	R 25191	Surve oil	11228	1816			اب	NIC		472
3 92701	CES	276	Base oil	118		<u> </u>		5			52
4 22841	RER	254988	011	118				5	MC		37
5	CES	Tole		118				3	1		SI
672872	15. LinemP	er 2254	CryTal GEL	118		<u> </u>		3	MC	:	SI
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8						<u> </u>					
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Date			1-26	9					<del></del>		·	
Leadma				• .						lush, HF - Hot		
		the nearest half gallon.		<u> </u>	<del>i</del>	l Haal				rgent, P - Pres		
	Vork er Nø.	Customer Name	Unit#_	Product Name	Process	Heel (gallons)	Drum No.	Time Request		Time on Bay	Time off Bay	Cleaner's Initials
122	871	CES	243	W. Wales	8-11-10	P		<u> </u>	14			IIL
2 22	870	CES.	271	W. water	8-11.	16	ļ		5	<u> </u>		JE
3 22	469	Team	769	Mineraloil	7-11.				5			JE
425	2845	Khenfack	2872	gc1 205	\$9-11	-12			3_			ST
5 D d	1851	Tidepost	7-448	way	8-11			ļ	_5_	<b></b>	· · · · · · · · · · · · · · · · · · ·	136
6 20	-699	CES	951V122	(Ch) - I VIII LEVE			<b></b>	ļ	4		:	1/4
723	2817	PSC	1517		8-11-13	-18		ļ	4	·	·	CP,
883	477	Studge from	•	Recrash	16				3			JE
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10			·	·								
11						· · · · · · · · · · · · · · · · · · ·			·		·	
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eadman	grmana	60							Flush, HF - Hot			
lecord all heels to	the nearest half gallon.				<del></del>				rgent, P - Preso			4
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials	-
122-837	JT5	761	sul Furic	1181	<u> </u>	ļ	ļ	3			AR	5
2 22848	CES	270	wasic water					5			718	-
312847	ISTYSOILEY	7025	sodium bisa.	115		<del></del>	<b></b>	->				
422697	610 bat	51-2	oi publicy	11.8				3			SID	
5/22847	KFK.	259007	Kiver ext	108			<u> </u>	_5			2	-
672850	610bal	15/1-2	Oil & WHIEN	11 8 - 13				5	NI			
7 27 8 17	ADLER	PT 762	Megalar Wase Solo				· ·	4	178		77	
922845		1872	601209	1/8			-	3	NA		57	!
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Date	dman		JU						: CF - Cold Flustic, D - Deter			
	Work	the nearest half gallon.	4 11 - 4 - 44	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay	Time on Bay	Time off Bay	Cleaner's Initials
	Order No.	Customer Name	Unit#	1 1 0 = 1	£5 8-11	-16	140.	vednesi	5	oay	Bay	TSC
_1	22844	Alsel	RT-762				000	3			nlc	7/
_2	22837	15	761	Sultanic	8-11-1	8	2509	-	\$3			20
. 3	22817	PSC	1517	nlusolids	18		·	<b> </b>	4		nle	78
4	22840	JAM	317	Drese!	8-11			ļ	5			JZ
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te adman	the complete offer	<b>ブレ</b>					rocess Key: team, C - Caus				
Work	the nearest half gallon.  Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	
Order No.	Cusioner warre	7202	3UKon. CACO	8-11-			3				77
22195	Ewira	@102	n/A Solids	8-U			5				JL
22141	0 42	27/01/2	Cerbon	8-11-	16		5				76
22840	JAM	317	Diesel	8-11			5			nle	JE
228/7	PSC	1517	Altsolids	18		•	4			nle	CP/J
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Date	1-23-6	9	•							·	· .
Leadman	Armand	<u> </u>		•			-		Flush, HF - Hot	· ·	
Record all heels to	the nearest half gallon.		· · · · · · · · · · · · · · · · · · ·		<del></del>				rgent, P - Pres		
Work	` `	4 1 14 .44	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
Order No.	Customer Name	Unit#	<del></del>		(Banous)	140.	vierlaesi	<del> </del>	Day	Day	AP
122838	Perro	973	AdiTive oil	41,28		<del> </del>		3	<del> </del>		FK
211791	CES	235	mex	118	·	<b> </b>		5			J.K
322835	RFR	258451	River water	118		ļ:	<u> </u>	6			J.K.
412836	RFR	25 9020	Riverient	218				5			578
522819	Korper 5	297 H	azaviste	1886				4			JP.
612796	CES	409	Red Pow	as				5			JR
722831	ROKEY	23253	water mud	118 .				U			CP
877747	9-5	T-664	Receish	117				4			OP
912839	Inner Plan	5619	niesei	1) 8			-	5~			572
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Date	)		1-22-9	. ·					<del></del>			· · ·
	lman		<u> </u>	•						lush, HF - Hot		
Reco		the nearest half gallon.		T	· · · · · · · · · · · · · · · · · · ·					gent, P - Preso		
	Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22794	CES	228	p. Wwaler	8-11				5			JL
2	22792	CES	@233	hly waste	8-11-	16			5			76
3	22827	baker.	SV2-9086	RC Rust water	8-11			-	5			ゴレ
4	72834	Bakes	718	Ext only	14				4			CO
5	22795	JAm	318	Libeal	8-U-	12			3			35
6	72823	Baker	5V21431 P	i Ristwater	8-11				Ï			JE
7	22793	CES	241	O. Lywaler	5-11				5			JZ
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10						· · · · · · · · · · · · · · · · · · ·						
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Date	1-27-0	9	- -						·		-
Leadman	Armand	<u>e</u>	-						lush, HF - Hot		
	the nearest half gallon.	<del></del>	T		Heel	Drum	Time	Bay	gent, P - Preso	Time off	Cleaner's
Work Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1	CES	100	Ext wash	2114			1	3			AR
2/2/6007	RPK	241951	WUSTEPH 10	118			ļ	3_	<u>                                     </u>		375
322825	Funer Plant	3106	IPA YUNTER	118		<u> </u>		1			DK
422824	Baker H	KOSE	auter mad	128				4		<u> </u>	27
522821	perro	688	eryde oil	1128				3			HR
622777	slydge	Pump	loil	118				2			J.72
722787	TICCPOY	3006	Ruel Oil	1184				4			ep
822786	Pireberia	324	crude oil	218				5			JK,
922830	CES	228 3	oil x comer	218			Ŷ	4			<b>3/</b> 472,
1022826	cheam Pak	21661	STEAM Alcoho	1118				5			IZ
11 22 829	Snuiro	103	Come water	118				1			CP
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	dman		J1	•				rocess Key:					
Reco		the nearest half gallon.	<del></del>	· · · · · · · · · · · · · · · · · · ·	1	Luci		team, C - Cau				cleaner's	4
	Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaners Initials	1
1	22814	RyRent	259285	Muddyworler	8-11				S			JL	1
	22816	Tide port	1050	JP	8-11		ļ		. 5			II.	4
3	2 <del>0</del> -758	Tideport	1089	When	8-11-	-12	<del> </del>		5			72	
	<del>22785</del>	Milstead	of the		ertes	85-11-	7					600 C	-16
	<u> </u>	FIREBITA	345	Peed Stock	<b>8</b> -11-	9	<del> </del>		4			CP	4
-6	22815		1056	JP-8	8-11				3			CP	-
_7	22820	Tideport	1075	Firelail	8-11				3	·	•	JE	┨
	22756	Ticeport	1085	solvente	8-11		<u> </u>		<u>ک</u> 2.4			JE	1
	00800	South coord	239	Extenty	8-11-	16			~ 2			50	ľ
1	<del>99820</del>	CES	0-3-1	onywater	8 10	(6)			3				1
11										<b></b>			1
12 13											·		1.
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Date	1-21-0	9	•	,		<del></del>	<u> </u>	·	·		
Leadman	Armande	<u>,                                      </u>	•				_		lush, HF - Het		
	the nearest half gallon.		<u> </u>	<del> </del>	1	7			rgent, P - Preso		
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
122780	CES	249	Lube oil	11128				3			57
222232	Bakers	121444	crudeoil	111281	7		ļ	5			JR.
322778	CIVED YOU	Prock				· 	<b></b>				
422778	Firebird	372	Black oil	11818				3			5.7
572781	Inner Plan	9028	FORTH Acid	-118			<del> </del>	4			M. K.
622754	PETYD	1042	publ of	11128				5,			) (
722752	CES	271	oi xwoter	118				4	·		# K ^
822774	CES	228	C-61	11128				4			5
922813	CES	255	Re wash	110				3			5/
1072757	Finer Plant		IPA y weres	118				5	1 7	· · · · · · · · · · · · · · · · · · ·	2.1
1122756	TidePort	1085	Solvent K	1184				3	1 1/4		57
1222815	TidePon	1056	51-8	118-				4	1/4/	·	CI
1322755	Tidepen	1089	rube oil	1180				5	NC	·	5 R
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Leadman	Armande	2	•						flush, HF - Hot		
	the nearest half gallon.		I	· 1	112-21				rgent, P - Preso		
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
122737	Andrews	1722	Rewash	127				N			CP.
222587	Baker VB	27633	Slurry oil	11178	6			3	<b> </b>		57
321132	Bak-V	21444	crude oil	11128	18			5	NC		5.8
422742	Tideport	7-639	Fuel oil	1184				4			CP
527343	Tideport	T-448	Solven-K	1189				4	1		CX
622775	TidePon	1037	hubcoll	1184				3	NC		SI
792744	CES	233	Feed STOCK	11816				4			Call
822746	CES	270	oilx water	118				4	, ,	· · · · · · · · · · · · · · · · · · ·	AR
922745	TidePort	971	solvenia	.1184				4	WC		CP,
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Leadman		51	•			•			CF - Cold Flush, HF - Hot Flush, DI - Diesel ic, D - Detergent, P - Presolve, Ex - Exterior				
	the nearest half gallon.	<del></del>	1	i	Line					Time off			
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Bay	Cleaners Initials		
122750	TidePost	1051	Green Oil	8-11		<u> </u>		43			JE		
222751	Tide port	3007	JP-8	8-11				-4			JI		
322783		259	Baseoil	8-11				2/			JT		
422753	CES	226	Mer Waste W.	8-11				3			DE		
572775	Tide Post	1037	Lube 011	8-11		<b></b>		3			JE		
622745	Tide port	971	Hycrocarbons			<u> </u>		4			27		
722719	CES	104	nlH Solids	8-11				4			17		
8 22797	PetroExp	1048	Lubricant Add		<u> </u>			3			JE		
922749	JAm	318	M. neval Oil	8-11	· · · · · · · · · · · · · · · · · · ·			4			リゴ		
10 22232	baker s	1214441	m croseoil	X-11-1	2			5		VILC	71		
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₹ec	ord all heels to Work	the nearest half gallon.	<u> </u>			Heel	Drum	Time	Bay	Time on	Time off		
,	Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials	
1	22611	CES	105	NH Solids	8-M	·			H			877	
2	22741	CES	256	MIH Waste W.	8-(1		<u> </u>	<u></u>	3			TE	
3	22608	Pero Exp.	LT-1112	Wasternes	8-11-1	6			84			トプラ	
4	22678	Baker	VB-29749	Shory sil	8-11-12	10	·		3			JE	
5	72-609	JAM	317	Lubevil	8-11				4			27	
6	22232	Baker	5/2 14441	m orde oil	8-11-1	-		-	5		rlc	JL	
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.eadman	Armand	¢	•						lush, HF - Hot		
Record all heels to Work	o the nearest half gallon.	I .		l	Heel	Drum	Time	Bay	gent, P - Preso	Time off	
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
122682	CES	248	EXI wash	1115	_			5			TR
222684	JAM	317	Lube Oil	118				3			59
3 22683	TidePort	1093	FUPL OIL	1184				2/			TL
422232		121444	crudeoil	111218				3	NIC		JF
5 21739	Baker	23254	Sour Water	11812				4			JE
622687	Baker	28974	sour wuit	11812	,	s		5			JR
727365	TidePort	104	Rewash	118				5			27
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hift late Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel eadman F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior ecord all heels to the nearest half gallon. Heel Drum Time Bav Time on Time off Cleaner's Work **Product Name** Process (gallons) No. Request No. Bay Initials Bay Unit# Order No. **Customer Name** 857 8-11-10 CA 8-11-16-18 57 11B-25030 Has Waste CP 7143 21708 11 12 13 14 15 16 17 18 19 20 21 22 23

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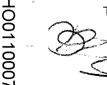
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Record all heels to Work	the nearest half gallon.	<u> </u>			Heel	Drum	Time	Bay	Time on	Time off	Cleaner's	
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials	
122670	CES	238	B088-011	118				5			JR	
2 22666	TO POO	946078	orude oil	118				U			CP	
3 22368	CES	233	wastewaren	12818				3			51	
422669	JAM	312	rube oil	118				4			CP	
5 22653	RER	241086	CLYCOL	118				5			JIZ	
6 27654	RFIC	605559	Re clean	1 (816				6			3.2	
722664	RER	607015	Reciean	11810				5			5.R	
822671	Leeis	2085	Talloil	118				4	11		CP	
922595	Baker	325198	Scarry oil	11816	<del></del>		<u> </u>	3	NIC		SI	
10 22346	CES	276176	1407-W/50/16	181181	4	<u> </u>		5		ļ	JR	
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Leadman	-	JL				Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel							
Record all heels to	the nearest half gallon.				,	<del>-}</del>	team, C - Caus						
Work					Heel	Drum	Time	Bay	Time on	Time off	Cleaner's		
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials		
102608	CAlgone	OC-3	Activates Care	ion 8-1	1	ļ			4		77		
222654	RYR	605559	pwmp	8-11	-14	ļ			•Ч		77		
3 22664	RHR	60705	punp	8-11-	16	1			3		JB		
4 22652	Envico	103	Olywater	8-11	35	CIP			3		JE		
5 22665	MISSION	766	pole oil	8-11	-12				4,		JI		
622370	Boker S	FVP8020	Fire water	8-11					5		JZ		
722347	Tideport	1089	Eastman Sol.	8-11					4.		17		
8 22726	Innesplant	2355	NH Solids	8-11-1	8-16	150	R/0		3		JE		
922655	@ Tideport	1052	Fuel oil	8-11-	3				5		JZ		
1022657	PB4R	241979	Polymer	8-11					5		12		
11 22371	CES	235	Muste Flan.	7-11	H6				4.	<u> </u>	UT		
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	to the nearest half gallon.	<u> </u>				1	team, C - Caus				
Work					Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.		Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
1226-15	TRFR	239410	after mud	11818		<u> </u>		3			51
222369	Baker	28509	waste water	118				4			CY
3 22589	Baker	23629	Slurry oil	111281	6			5			JK
422647	CES	27622	7 Haz Solida	11814	ł			5			5 R
522371	ctz	235	meThanoi	118				3			57
62237	mission	765	hube ail	1/8				5			5.R
7 2237 3	missien	798	hube oil	118				5			J.R
821726	Inucy Plan		Paity Acid	1181	\$			3	NIC	AR	151
922656		102	choline	118				5		//./*	5R
10	Robers	139.9	6 15 P					8			<b>福</b>
11 22652	Tideport	1092	Fuel oil	11811				5	N/c		177
12 2234	TINO POVI	1089	Solveni )	7784				4	NIC		OP
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	Work					Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
	order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
2	364	Kain 4 Ren	+ 255186	Sodivalorbori	te 8 - 11		ļ		3			32
22	2730	RUR	mats	Sodi vm Corboni	8-11				5			JL
32	2345	CES	28008V	0 A/H suaste	8-11-	10			4			77
42	2595	Baker	VB 25198	Slorryoil	8-11-12	1-16	ļ		3	<del></del>		JE
_52	-2359	JAM	314	O Althouaste Shrryoil Lubeail Slurry oil Orilling mud W. water	8-11-12	<u> </u>	<u> </u>		4			JT
69	-2589	Baker	N23629	Slurry oil	8-11-	12 \$			<u> </u>		Mc	75
72	2645	RUR	239410	prilling mud	8-11-18		<u> </u>		٢		nla	JE
_8 2	12369	Baker :	5/28509	W. water	8-11			ļ	4		nla	J7
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Record all heels to Work	the nearest half gallon.				Heel	Drum	team, C - Caus	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
122351	TidePovi	3007		1184				21			P
222352	JAM	318	zube oil	118				5			572
32273.7	Baker VE	27175	summoil	111718	8			3			57
422649	CES UB	3388	oilyweier	11816				5			JR
5 2235	team	822	oil	118		ļ		5			15 R
622357	TidePart	1052	Diesel	1184		ļ		-(	ļ	ļ	CP
722360	CES N.	44937	N/H Solids,	11816	18	ļ	ļ	5			5R
8 22374	PSCVB	27628	N/HSOLIS	\$ 11816	<b>'</b>	-		4	ļ		CH
9 225 95	Bakervi	25798	surry oil	1:1281	618	ļ	ļ	3	1/1/		15 [
10 2 235 9	JAM	314	sube oil	1118	ļ			4	1	10	CY
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Shift Date Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel Leadman F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior Record all heels to the nearest half gallon. Time Time on Time off Cleaner's Heel Drum Bay Work Initials Customer Name Unit# Product Name Process (gallons) No. Request No. Вау Bay Order No. JL 8-N 1056 222350 Tideport 1050 Diesel 8-11 322650 Tileport 1021 Diesel 8-11 ST-3 Dilywater 8-11 522349 Global BTT-2 Orlynater 8-11 622337 Baker Sv28989 Lm Brimerater 8-11 18 7 Digort Baker Boxes 3 011 10 11 12 13 14 15 16 17 18 19 20 21 22 23

Shift Date Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel Leadman F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior Record all heels to the nearest half gallon. Time off Heel Drum Time Вау Time on Cleaner's Work Order No. Customer Name Unit# Product Name Process (gallons) No. Request No. Bay Bay Initials VB-25647 N/4501.ds 8-11-16 22334 Baker SV23173Rim Br. mewales 8-11 150 22554 Baker SV28993 Rlm Brime Water 8-11 300 250 325 59244 Tideport 1060 Evel Dil 672344 CES 2216 N/HSOLIZ N/HS01:25 8-11 10 11 12 13 14 15 16 17 18 19 20 21 22 23

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Leadman	Amundo								ush, HF - Hot F		
Work	the nearest half gallon.			<del></del>	Heel	Drum	Time		gent, P - Preso Time on		<del>,                                     </del>
Order No.	Customer Name	Unit#	Product Name,	Process	(gallons)	No.	Request	Bay No.	Bay	Time off Bay	Cleaner's Initials
1	1ES	2000	Exi wash	7164	(30)			el			OP
2/12730	RFR	mats	Dil wever	118				5	NIC	- (2	575
3 22338	Firebird		Fuel oil	108				5	1,,,,		52
422646	11	102	oil xwater	119				3			57
5 22340	Lee's	2165	Tail oil	118				3	·		SK
622343	Alcan	35 FG	earbon	112				3			157
7	CES	283	Exitush	118				5			5.17
8	CES	296	Ext exach	718		·		u			CB
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	els to the nearest half gallor	i.	<u> </u>	1	111	Drum	team, C - Caus		<del></del>	ve, Ex - Exter	Cleaner's
Wor Order		Unit#	Product Name	Process	Heel (gallons)	No.	Time Request	Bay No.	Time on Bay	Bay	Initials
11247			Resin	11818				4	WIC		CP
20263	2 Zach-bille	48247	westernier	11816				4	. 1		JR
32273	ZRER	265020	Feed STOCK	118				3	N/C		ST
4226	LL CES	1270	N/H solids	11816							式
52261	12 CES	253	oil.	118		ļ		5		•	5.73
6 226	10 CES	263	Base oil	118		-		5			5.12
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Leadman   The Record all heels to the nearest half gallon.	Shift	1 8	inc									
Record at heales to the nearest half gallon.	Date		-8-9						**************************************			
Work Order No Customer Name	Leadman		71				Cleaning P	rocess Key:	CF - Cold Flu	ısh, HF - Hot f	lush, DI - Die	sel
Order No.   Customer Name   Unit #   Product Name   Process   (gallons)   No.   Request   No.   Bay   Bay   Initials     3 2475   Institution miles   Italian   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Restance   Res	Record all heels t	o the nearest half gallon.		<u>,</u>			F/S - Flush/S	team, C - Caus	tic, D - Deterg	ent, P - Preso	lve, Ex - Exter	ior
182475 Institution MISS 124080 Res. n. 9-11-18 225 5ms 44 JT 220648 Missien 6229 crude oil 8-11 44 JT 38236 Tibe port 100 the dro carbins 8-11 3 JE 422-644 LEES 1165 Rolymer 8-11-06 5 JL 32 RMR 265020 Feedstack 8-11 3 JF 6 226036 Andrews 1888 Rinse After Ins 7-11-16 5 JR 33 JF 12 12 13 13 14 15 16 16 17 18 18 19 19 19 19 19 19 19 19 19 19 19 19 19	3						:	,			Time off	
2 20 643 Missien 6229 crute oil 8-11  3 2336 Tide port 100 Hirdrocarbons 8-11  4 22 644 LEES 1165 Polymer 8-11-05  5 22 732 Ryle 265020 Fordstock 8-11  6 22 634 Andrews 1885 Rinse After Ins 7-11-16  11  12  13  14  15  16  17  18  19  20  21  22  23	Order No.						No.	Request		Bay	Bay	Initials
30236 Tibe port 106 Hydrocarbons 8-11 42244 LEES 1165 Rolymer 8-11-6 522732 RYR 265020 FeedStock 8-11 622636 Andrews 1885 Rinse After Ins 7-11-16 7 8 9 10 11 12 13 14 15 16 16 17 18 19 20 21 22 23	1 22475	Institution			9-11-18	225	Sals		4			7
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6 DD (636 Andrews 1885 Kinse After Ins. 7-11-16 5 77  8 8 9 10 11 12 12 13 14 15 16 16 17 18 19 19 19 19 19 19 19 19 19 19 19 19 19	5 22 732	RYR	265020	Fee d Stock	8-11				<u> </u>			JE
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Shift Date Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel Leadman F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior Record all heels to the nearest half gallon. Time off Bay Drum Time Time on Cleaner's Work Heel Product Name (gallons) Request Order No. Customer Name Unit# Process No. No. Bay Bay Initials 150 96 crude or Tall oil -4 11 12 13 14 15 16 17 18 19 20 21 22 23

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Leadman	Amond	0							ush, HF - Hot F		
	the nearest half gallon.		,						gent, P - Preso		
Work	• •				Heel	Drum	Time	Bay	Time on	Time off	Cleaner's
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
122590	Lees	935	Tall oil	118				i			CP
227725	tidePon	7-480	Exaustion	1x 111	<b>5</b>			3			SI
322586	BORRY SI	127279	wateraceater	128				5			JK
422728	BU112CXC	3249	Crude oil	118		ļ		5			575,
522799	ETSN	46842	Rewash	117				5	1		J.K
622286	Baker s	P 001	N/H Solids	118				3	MIC		57
7 22375	CES	255	Rewash	118				21	ļ		CP
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Shift				. *-	•						
Date	1-5-09										
Leadman	Armando					1			ush, HF - Hot F		
	the nearest half gallon.					<del></del>			gent, P - Preso		<del></del>
Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
	Customer Name			FIUCESS	(gallons)	INO.	Nequest	W.	Day	Day	n illiais
122581		249	Base oil					<del></del>			CP
2	LES	100	Ex wash	1114		<u> </u>		3			14 R
322580	Innevplan	9028	crude oil	11128				5			5 R
422721	CES	276548		11816				4			CP
5 22480	CES	239	lube oil	11128				5			IR
622720	Baker G	25757	water studge	1				3	1000 PM		57
722722	Finebird	357	Feed STOCK					4/	11/10		CP
812573	RES	258760		118				4	1.00		CD
922723	Clohal	51-3	oi ware or	118				5	1		JR
10/22583	InnerPlant	249	Entracid	1/2				3	N/C		37
11 22584	TidePor	1056	anlvent	1184				5	NIC		TR
12									11-(		1
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1						<u> </u>	<del> </del>		<del> </del>		
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Date		1-3-0	9									
Lead		Armand	0					rocess Key:				
Recor		the nearest half gallon.	<u>-</u>					team, C - Caus				
	Work Order No.	Customer Name	Unit#	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
		200				(ganons)	140.	request	3	Bay	Day	Tittidais
1/	2568	N 1 1	,	Orilling mu	7118		ļ		<u> </u>			25
-2/2	2575	CES		exi wish	1114							CP
3	2541	RER	720056	crude oil	11 128		<b></b>		-5			IZ
4	2577	'CES	238	methanol was	e/118				3	, 7		57
5	2580	THREXPIONT	9028	crudeoil	118				5	NIC		JR
6	2578	JAM.	313	Lube oil	118				3	, ,		37
7	12579	JAM	317	rube oil	118				4			CP
8	19581	Tidepon	106	Fuer oil	1184				3			57
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Shift											
Date	1-2-09	<u>'</u>									
Leadman	Armando						rocess Key:				1
<del></del>	the nearest half gallon.			r		<del></del>	team, C - Caus		<del></del>		
Work	Oughts and Manager	11-7-4	Don't st Name	D	Heel	Drum	Time	Bay	Time on	Time off	
Order No.	Customer Name	Unit#	Product Name	Process	(gallons)	No.	Request	No.	Bay	Bay	Initials
192572	CES	270	waste water	11.8		<del> </del>		4	ļ	ļ <del></del>	CP
222570	CES	233	Toluene	118		<u> </u>		3_	1		ST
3 22568	RER	255455	Prilling mu	2118				3	NIC		5%
472708	Tideponi	3012	Fuertoil	718				4	[		CP
522713	CET	Taxle	aePhalT	111718				3			57
622714	CES	241	Resin	11812				4		57	AR
722531	GIS	T-722	Rewash	117				5			JR
8 22573	CES	258760	1 . 1 — '	11818				4	WIC		CP
922331	RFR SF	837	piese(	118				5	NIC		272
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# TANK WASH WORK ORDER

aning Division Houston, TX 77021 1460 • Fax: (713) 676-1676

22665

676-			
C	ustomer:  M. skic V		Date: 13/49
		1	Time
ractor	ddress:		Time:
20001			13.5
Trailer / Container Number D	ropped By:	)	Need By:
	Capi porce	alang panggan ang mga ang ang ang ang ang ang ang ang ang a	
CONTAINER TYPE: TO	TE BIN PROLL DOOR		
TANK TRAILER DI	ROLL TARP BOX 🔲 VACUU	M BOX	POLY TANK VACUUM TRUCK
CHANK TRAIL	Last Contained	Heel - Hazardous	Heel - Non-Haz Drum / Rolloff
Compartment #	oil		
2			
3			
4			
5	WORK PEDEOD	V-0	TANK ENTON DEDMIT
CLEANING CODES	WORK PERFOR	A CONTRACTOR OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY O	TANK ENTRY PERMIT
1 Air Dry			6) #1 1. 2#2 #3 #4 #5
2 Quick Rinse		LEL (<10%)	#1_ 🔾 #2 #3 #4 #5
3 Cold Water Rinse	· ·	CO ² (<35 ppm)	
4 Hot Water Rinse		Toxic Vapor	#1 <u> </u>
5 Steam Only (Per Hour)		Signature:	) '
6 Steam & Dry		Stripper Usage:	
Dry Dry			
8 Detergent Wash, Rinse & D	Ory P	Comments:	
	y /	······································	
Libraryo	1 5 /		
11 Waste Water  12 Solvent Wash (Diesel # Ho	ours)	<del></del>	
12 Solvent Wash (Stripper)			
13 Solvent Wash (Stripper)			
	Internal)	·····	
	Internal		
15 Exterior Trailer Wash (with	i internaty	Authorized Additi	onal Services:
	4		
40 Hand Labor (# Woll, it is	ours)		
7# Hours			
20 Solvent Wash (Green Strip	oper)		200 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MARIE - 100 MA
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Hose Cleaning			
Pump Cleaning		thoroughness of the tank	ces, Inc., Cleaning Division, makes no guarantees with respect to the washing procedure or the total elimination of interior residues and/or
Tomp Orotaning		release CES Environmental S	ne equipment remains the responsibility of the customer, and they hereby services, Inc., Cleaning Division, from any responsibility for claims arising the equipment was improperly cleaned, resulting in damage or loss.
<u> </u>	Date 1-13	CES Environmental Se	rvices, Inc., Cleaning Division, is in no manner responsible for any
Cleaned By:		damages o	r losses of equipment and/or materials left in their yard.
· · · · · · · · · · · · · · · · · · ·	Date	Dulma Nome	Data
Inspected By:		Print Name:	Date
		Signature:	

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		olied for this shipment is a prop	er container fo		tion of the co			shipper. Receive	d subject to tariffs	and/or cont	racts in effect	on the date of issuance hereof.

# Environmental Services

### TANK WASH WORK ORDER

ner / Tank Cleaning Division Griggs Rd. • Houston, TX 77021 none: (713) 676-1460 • Fax: (713) 676-1676

22736

£					
PO #	Customer:				Date)
	M.55	Chall			1/15/09
Tractor	Address:				Time:
Trailer / Container Number	Dropped By:	71 7			Need By:
10 12 bo 12	4	alk lives			
CONTAINER TYPE:	TOTE BIN	POLL DOOR BO	X ISO CONT	AINER [	DRY BULK
TANK TRAILER	ROLL TARP E	BOX	OX FRAC TANK	POLY TAN	K VACUUM TRUCK
Compartment #	Las	st Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 Cole or					
2					
3					
4	-				
5					
CLEANING CODES		WORK PERFORME	O I	TANK ENTRY	PERMIT
1 Air Dry			Oxygen (19.5% -23.5	%) # <i>揉1.0 U</i> #2	#3#4#5
2 Quick Rinse			LEL (<10%)	#1 #2	
3 Cold Water Rinse			CO ² (<35 ppm)	#1 <u>6</u> #2	
4 Hot Water Rinse			Toxic Vapor		#3 #4 #5
5 Steam Only (Per Hour)			Signature: 1	<u>K</u>	
6 Steam & Dry			Stripper Usage:		
7 Rinse, Steam & Dry					
8 Detergent Wash, Rinse 8	Dry.		Comments:		
9 Caustic Wash & Dry					
10 Caustic Wash, Rinse &	Dry				
11 Waste Water Surcharge		·			
12 Solvent Wash (Diesel #	Hours)				
13 Solvent Wash (Stripper)					
14 Exterior Tractor Wash					
15 Exterior Trailer Wash (w					
16 Exterior Trailer Wash (w					
17 Exterior Acid Brite Wash	<del></del>		Authorized Addit	ional Services: —	
18 Hand Labor (# Men / # I					
19 Hydroblaster (# Hours)					
20 Solvent Wash (Green S	tripper)			and the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of t	
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	0		release CES Environmental	Services, Inc., Cleaning Divis	sponsibility of the customer, and they heret ion, from any responsibility for claims arisin ly cleaned, resulting in damage or loss.
Cleaned By:	6	Date 1 - 15-0	CES Environmental S	ervices, Inc., Cleaning Division	n, is in no manner responsible for any
•			damages	r losses of equipment and/or	materials lett in their yard.
Inspected By:		Date	Print Name:		Date
				***************************************	

Signature:

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Tanks pointed		-L		EMERY CA 1-800-4	124 -	9.5	rv	

al Services ming Division Houston, TX 77021 22643 676-1460 • Fax: (713) 676-1676 Date: Customer: 15510W Address: Tractor Trailer / Container Number | Dropped By: 627° DRY BULK CONTAINER TYPE: TOTE BIN ROLL DOOR BOX ☐ ISO CONTAINER ☐ VACUUM TRUCK TANK TRAILER ROLL TARP BOX ☐ FRAC TANK POLY TANK ☐ VACUUM BOX Heel - Hazardous Heel - Non-Haz Drum / Rolloff Compartment # **Last Contained CLEANING CODES WORK PERFORMED** TANK ENTRY PERMIT Air Dry Oxygen (19.5% -23.5%) #171 0 #2 2 Quick Rinse LEL (<10%) CO² (<35 ppm) 3 Cold Water Rinse Toxic Vapor #1 0 #2 #3 4 Hot Water Rinse Signature: 5 Steam Only (Per Hour) Stripper Usage: 6 Steam & Dry Rinse, Steam & Dry Tank Has old product Comments: Detergent Wash, Rinse & Dry 9 Caustic Wash & Dry 10 Caustic Wash, Rinse & Dry 11 Waste Water Surcharge 12 Solvent Wash (Diesel # Hours) 13 Solvent Wash (Stripper) 14 Exterior Tractor Wash 15 Exterior Trailer Wash (w/o Internal) 16 Exterior Trailer Wash (with Internal) **Authorized Additional Services:** 17 Exterior Acid Brite Wash 18 Hand Labor (# Men / # Hours) 19 Hydroblaster (# Hours) 20 Solvent Wash (Green Stripper) 21 Passivation Hose Cleaning Pump Cleaning CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss. Cleaned By: CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard. Date Inspected By:_ Print Name:

Signature:

# PETROLEUM CARRIERS, INC.

## PRESS HARD USE A BALL POINT PEN

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MILEAGE REPO	DRT:	END:	388,56	8	BEGII	v:388	,554 TO	OTAL:/4	l .
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1 ST	1	2	Đ	68	30	Ð	3		110
2 ND	8	?	0	68	70	$\theta$	- 3		
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MISSION PET	er da en en en en en			92 F. S. S. S.					
OIL COVERED BY DATE SHOWN ABO		ICKET IS	CONSIDERED	TO BE	RECEIV	ED BY MIS	SSION PETROLE	UM CARRII	ERS, INC. ON THE FIRST

# TANK WASH WORK ORDER

17192

ank Cleaning Division
SPRJ. • Houston, TX 77021
(713) 676-1460 • Fax: (713) 676-1676

		<del></del>		
Customer:	Mission			Date: 3.17.09
Tractor Address:				Time: 1:59p
Trailer / Container Number Dropped E	By: */*/	1		Need By:
795				Waiting
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	ISO CONT	AINER [	DRY BULK
				VACUUM TRUCK
	Last Contained	Heel - Hazardous		Drum / Rolloff
1 Passe or				
2				
3				
4				
5				
OLEANING CODEC	WORK PERFORMED		TANK ENTRY F	PERMIT
1 Air Dry		Oxygen (19.5% -23.5		#3 #4 #5
2 Quick Rinse	4	LEL (<10%)	#1 © #2	_ #3 #4 #5
3 Cold Water Rinse		CO ² (<35 ppm)	#1 0 #2	#3#5
4 Hot Water Rinse	<i>y</i> ≱	Toxic Vapor	#1 0 #2	#3 #4 #5
5 Steam Only (Per Hour)		Signature:	ブ <u>レ</u>	
	<del></del>	Stripper Usage:		
6 Steam & Dry		-		
/ Hinse, Steam & Dry		Comments:		
		-		
9 Caustic Wash & Dry		<del>-</del>   .	·	· , •
10 Caustic Wash, Rinse & Dry				
11 Waste Water Surcharge		-{		
12 Solvent Wash (Diesel # Hours)				
13 Solvent Wash (Stripper)		-		
14 Exterior Tractor Wash		_		
15 Exterior Trailer Wash (w/o Internal)		-		
16 Exterior Trailer Wash (with Internal)		Authorized Addit	ional Sontiaco:	
17 Exterior Acid Brite Wash		- Authorized Addit		
18 Hand Labor (# Men / # Hours)				
19 Hydroblaster (# Hours)		<del> </del>		
20 Solvent Wash (Green Stripper)				
21 Passivation				·
Hose Cleaning	4			
Pump Cleaning		thoroughness of the tank moisture. Final inspection of t release CES Environmental S	washing procedure or the tole he equipment remains the res Services, Inc., Cleaning Divisi	nakes no guarantees with respect to the all elimination of interior residues and/or sponsibility of the customer, and they hereby on, from any responsibility for claims arising
Cleaned By:	Date	CES Environmental Se		ly cleaned, resulting in damage or loss.  n, is in no manner responsible for any materials left in their yard.
Inspected By:	Date	Print Name:		Date
		Signature:		
•	-3A	1		4



#### Bill of Lading / Delivery Manifest & Receipt

document evidences a delivery into shipper's consigned's truck, it is not a bill of lading, but a manifest and receipt for the delivery. The shipper diffies that the herein named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Carrier certifies that the container supplied by the carrier for this shipment is a proper container for transportation of the products described below and it will not cause any of the prohibited activities bublished in 40 CFR and 80.78. The Carrier did not observe any unusual or unsatisfactory loading conditions.

CARRIER BY:

P.O. #:

HAZARDOUS MATERIAL EMERGENCY PHONE - CALL CHEMTREC 800-424-9300 EMERGENCY SPILL PROCEDURES, HAZARD INFORMATION, SHIPPERS CERT & EPA MESSAGES ARE PRINTED ON REVERSE SIDE.

200903038 MISSION TRANSPORT Carrier: Manifest: Loaded At: 03/17/09 Carrier No: 33 Dates THREE RIVERS, TX (B) -DS INV. 06:50:00 2851 Time in: Truck No: P.O. BOX 490 795 07:31:00 Trailer: Time out: THREE RIVERS, IX 78071 TRUCK/TRAILER \$635902 Prans: Contract: EPA#4006

Sold To: Ship To: Froject:

Vopak Terminal Deer Park, TX Vopak Terminal Deer Park, TX

c/o Nynas USA, Inc c/o Nynas USA, Inc Vopak Terminal Deer Fark, 2759 Battleground Road 2759 Battleground Road

DEER PARK, TX 77536-0897 DEER PARK TX 77536-089 Deer Fark* TX

Comments:

HE H

Seller: Nynas USA Inc Acct.: 244318

Freight: PREPAID Seals: 70843,70844

PRODUCT AND CLASSIFICATION UCM Tare Gross Met r 300 BASE OIL GAL 6,125.00 MT 14.03 35.99 21.95 79,340.00 LES 30,940 48,400.00

Tank/Batch: 218/90303 Temp: 150.00 Grav: 0.9488 TONS: 39.6? 24.2

oaded by: EGARIA

proc_oils

TANK WASH WORK ORDER

17193

Houston, TX 77021
F676-1460 • Fax: (713) 676-1676

Gustomer:				Deter	_
Customer:	Missim			Date: 3 · / 7 · ·	09
Tractor Address:				Time: 2:0	Op
Trailer / Container Number Dropped By				Need By:	19
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	LISO CONTAIN	VFR E	DRY BULK	-//
TANKTRÄILER ROLL TARF		FRAC TANK	POLY TANK		M TRUCK
	ast Contained	بسوب ومروبي سيدني وسينواهم	leel - Non-Haz	Drum / Ro	No. of Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other party of the Concession, Name of Street, or other pa
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2 Base and					
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5					
CLEANING CODES	WORK PERFORMED	1	TANK ENTRY F	PERMIT	
1 Air Dry	WOTHER DENVILLE				μг
2 Quick Rinse		Oxygen (19.5% -23.5%) LEL (<10%)	#1 #2 #2	#3#4 #3#4	#5 #5
3 Cold Water Rinse		-1	#1 #2	#3 <u>#4</u> #3 <u>#4</u>	_ #5 #5
4 Hot Water Rinse		Toxic Vapor	#1 9 #2	#3 #4	_ #5 #5
5 Steam Only (Per Hour)		Signature:	E		- ","
6 Steam & Dry		Stripper Usage:	6.7		
7 Rinse, Steam & Dry		-			
8 Detergent Wash, Rinse & Dry		Comments:			`\
9 Caustic Wash & Dry	<del>*</del>				
10 Caustic Wash, Rinse & Dry		4			
11 Waste Water Surcharge	<del>/-/</del>	_		•	
12 Solvent Wash (Diesel # Hours)		<b>-</b>			
13 Solvent Wash (Stripper)		-			
14 Exterior Tractor Wash		┪			
15 Exterior Trailer Wash (w/o Internal)		-			
16 Exterior Trailer Wash (with Internal)	<del></del>	1			
7 Exterior Acid Brite Wash		Authorized Addition	al Services		
8 Hand Labor (# Men / # Hours)					
9 Hydroblaster (# Hours)		<del></del>			
O Solvent Wash (Green Stripper)		<del> </del>			
1 Passivation					
lose Cleaning		<del> </del>		· · · · · · · · · · · · · · · · · · ·	
ump Cleaning		CES Environmental Services	Inc., Cleaning Division.	makes no guarantees with re	espect to the
	Date 3-11-9	thoroughness of the tank was moisture. Final inspection of the e release CES Environmental Serv from any allegations that the	shing procedure or the tot equipment remains the re- ices, Inc., Cleaning Divisi	al elimination of interior resi sponsibility of the customer, on, from any responsibility f	dues and/or and they hereby or claims arising
leaned By:	Date	CES Environmental Service damages or los	es, Inc., Cleaning Divisionses of equipment and/or	n, is in no manner responsit materials left in their yard.	le for any
spected By:	Date	Print Name:		Date	
		Signature:			-1

# vironmental Services

TANK WASH WORK ORDER

/Tank Cleaning Division riggs Rd. • Houston, TX 77021 e: (713) 676-1460 • Fax: (713) 676-1676

25329

<u>A</u>				<del></del>
O# Customer:	ission Petr	olecin		Date:
Tractor Address:	133100	orecen		Time:
7792 Address.				11:30 Am
Trailer / Container Number   Dropped E	By:			Need By:
6054 X D	lavid Lewi	<u></u>		
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	ISO CONT	AINER [	DRY BULK
TANK TRAILER POLL TAP	RP BOX	☐ FRAC TANK	POLY TAN	K VACUUM TRUCK
Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 CRode o.		<u></u>		
.2				***************************************
3				
4				
5				
CLEANING CODES	WORK PERFORMED		TANK ENTRY I	PERMIT
1 Air Dry		Oxygen (19.5% -23.5	%) #1 <u>900                                   </u>	#3#4#5
2 Quick Rinse		LEL (<10%)	#1 #2	_ #3 #4 #5
3 Cold Water Rinse		CO ² (<35 ppm)	#1() #2	#3 #4 #5
4 Hot Water Rinse		Toxic Vapor	n #1/ #2	#3#4#5
5 Steam Only (Per Hour)		Signature: 6	<u> </u>	
6 Steam & Dry		Stripper Usage:		
7 Rinse, Steam & Dry		<u> </u>		
8 Detergent Wash, Rinse & Dry		Comments:		
9 Caustic Wash & Dry				
10 Caustic Wash, Rinse & Dry		4		
11 Waste Water Surcharge			٤	
12 Solvent Wash (Diesel # Hours)				
13 Solvent Wash (Stripper)		<b>-</b>		The second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon
14 Exterior Tractor Wash		<b>_</b>		.*
<ul><li>15 Exterior Trailer Wash (w/o Internal)</li><li>16 Exterior Trailer Wash (with Internal)</li></ul>				
17 Exterior Acid Brite Wash		Authorized Addit	ional Services	
18 Hand Labor (# Men / # Hours)	,	- Additionized Addit	—	
19 Hydroblaster (# Hours)		1		
20 Solvent Wash (Green Stripper)				
21 Passivation				
Hose Cleaning				
Pump Cleaning		CES Environmental Serv	ices, Inc., Cleaning Division,	makes no guarantees with respect to the tal elimination of interior residues and/or
-		thoroughness of the tank moisture. Final inspection of t	washing procedure or the to he equipment remains the re	tal elimination of interior residues and/or sponsibility of the customer, and they hereby ion, from any responsibility for claims arising ty cleaned, resulting in damage or loss.
	<b>D</b>	from any allegations that	the equipment was imprope	rly cleaned, resulting in damage or loss.
Cleaned By:	Date	CES Environmental Se damages o	ervices, Inc., Cleaning Division or losses of equipment and/or	n, is in no manner responsible for any materials left in their yard.
Inspected By:	Date			Data
r		Print Name:		Date
		Signature:		
		olynature		



#### Bill of Lading / Delivery Manifest & Receipt

If this document evidences a delivery into shipper's consignee's truck, it is not a bill of lading, but a manifest and receipt for the delivery. The shipper certifies that the herein named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Carrier certifies that the container supplied by the carrier for this shipment is a proper container for transportation of the products described below and it will not cause any of the prohibited activities published in 40 CFR and 80.78. The Carrier did not observe any unusual or unsatisfactory loading conditions.

CARRIER BY:

P.O. #:

HAZARDOUS MATERIAL EMERGENCY PHONE - CALL CHEMTREC 800-424-9300 EMERGENCY SPILL PROCEDURES, HAZARD INFORMATION, SHIPPERS CERT & EPA MESSAGES ARE PRINTED ON REVERSE SIDE.

200903041 MISSION TRANSPORT Manifest: Carrier: Loaded At: 03/17/09 Carrier Wo: Date: THREE RIVERS, TX (B) -DS INV. 07:22:00 Truck No: 2852 Time in: P.O. BOX 490 Time out: 07:51:00 797 Trailer: THREE RIVERS, TX TRUCK/TRAILER Contract: \$635853 EPA#4006 Trans:

Sold To: Ship To: Project:

Jopak Terminal Deer Park, TX Vopak Terminal Deer Park, TX

2759 Battleground Road 2759 Battleground Road

DEER PARK, TX 77536-0897 DEER PARK TX 77536-089 Deer Park* TX

Comments:

Seller: Nymas USA Inc Act.: 244318

Freight: PREPAID Seals: 70845,70846

PRODUCT AND CLASSIFICATION WOM Tare Net Gross 6,064.00 T 300 BASE OIL GAL MI 13.95 35.69 21.74 LBS 30,760 78,680.00 47,920.00 23.96 Tank/Batch: 218/96303 Temp: 150,00 Grav: 0.9488 TONS:

Loaded By: KGAR/A

proc_cils

mental Services

Cleaning Division

676-1676 *			25452
_			Date: 30 109
			Time: 14:43
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ROLL DOOR BOX			DRY BULK  VACUUM TRUC
Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
WORK PERFORMED			
	Oxygen (19.5% -23.5%	%) # <b>?<u>~</u></b> #2 <u></u>	
·	LEL (<10%)	#10 #2	#3 #4 #5
		71	#3#4#5
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	- Suipper Osage.		
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	Authorized Additi	onal Services:	
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1/2/M	thoroughness of the tank moisture. Final inspection of the release CES Environmental S	washing procedure or the tot ne equipment remains the res services, Inc., Cleaning Division	al elimination of interior residues and/or sponsibility of the customer, and they here on, from any responsibility for claims arisi
Date 3/30/00/	CES Environmental Se damages or	rvices, Inc., Cleaning Division losses of equipment and/or	n, is in no manner responsible for any materials left in their yard.
Date/	Print Name:		Date
	-		
	By:    ROLL DOOR BOX   RP BOX   VACUUM BOX   Last Contained    WORK PERFORMED	By:	By:    ROLL DOOR BOX   ISO CONTAINER   POLY TANK   POLY TANK   POLY TANK   RP BOX   VACUUM BOX   FRAC TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY TANK   POLY

#### Bill of Lading / Delivery Manifest & Receipt

ses a delivery into shipper's consignee's truck, it is not a bill of lading, but a manifest and receipt for the delivery. The shipper named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation uplicable regulations of the Department of Transportation.

des that the container supplied by the carrier for this shipment is a proper container for transportation of the products described below and it ause any of the prohibited activities published in 40 CFR and 80.78. The Carrier did not observe any unusual or unsatisfactory loading conditions.

ARRIER BY:

P.O. #:

HAZÁRDOUS MATERIAL EMERGENCY PHONE - CALL CHEMTREC 800-424-9300 EMERGENCY SPILL PROCEDURES, HAZARD INFORMATION, SHIPPERS CERT & EPA MESSAGES ARE PRINTED ON REVERSE SIDE.

200903414 MISSION TRANSPORT Carrier: Manifest: Loaded At: 03/27/09 Date: Carrier No: THREE RIVERS, TX (B) -DS INV. 14:33:00 2847 Time in: Truck No: P.O. BOX 490 15:10:00 Trailers 816 Time out: TEREE RIVERS, TX 78071 TRUCK/TRAILER \$636151

Contract: EPA#4006 Trans:

Ship To: Project: Sold To:

Vopak Terminal Deer Park, TX Vopak Terminal Deer Park, TX

c/o Nynas USA, Inc c/o Nynas USA, Inc Vopak Terminal Deer Park, 2759 Battleground Road 2759 Battleground Road

TX 77536-089 Deer Park* TX DEER PARK DEER PARK, TX 77536-0897

Comments: 100M

Seller: Nynas USA Inc Acct.: 244318

Freight: PREPAID Seals: 69995,69996 PRODUCT AND CLASSIFICATION MOU Tare Gross

T 9US BASE OIL GAL 6,447.00 MT 35.72 22.08 13.64 LBS 30,080 78,760.00 48,680.00

Tank/Batch: 114/90312 Temp: 90.40 Grav: 0.9066 TONS: 39.38 24.34

WB 38486/1

Loaded By:

proc_oils

V2085.1 qxd

Net

# TANK WASH WORK ORDER

ank Cleaning Division
ags Rd. • Houston, TX 77021
are: (713) 676-1460 • Fax: (713) 676-1676

25939

PO #	Customer	S C .				Date: /8/0	7
Tractor 285	Address:					Time:	
Trailer / Container Number	Dropped E	Зу:				Need By:	
CONTAINER TYPE:	TOTE BIN		ROLL DOOR BOX	ISO CONTA	AINER D	DRY BULK	JM TRUCK
Compartment #		Last Con		Heel - Hazardous		Drum / R	
1 Brise 0.1		Luce		11001 1102010000	11001 110111102		
2	\						
3							
4							
5							
CLEANING CODES		WOR	( PERFORMED		TANK ENTRY F	PERMIT	
1 Air Dry				Oxygen (19.5% -23.5%		#3 #4	#5
2 Quick Rinse			····	LEL (<10%)	#1#2	#3#4	
3 Cold Water Rinse	<del></del>			CO ² (<35 ppm)		#3#4	
4 Hot Water Rinse				Toxic Vapor	#1#2	#3#4	#5
5 Steam Only (Per Hour)	<del></del>			Signature:			<del></del> -
6 Steam & Dry	<del></del>		·	Stripper Usage:			
7 Rinse, Steam & Dry							
8 Detergent Wash, Rinse &	Dry	1	•	Comments:	چھزیر مغیری دائی منازی منازی کا بھا ایسال ہی کا ساتھ کا ساتھ		
9 Caustic Wash & Dry		·					
10 Caustic Wash, Rinse &	Dry						
11 Waste Water Surcharge		1/		7			
12 Solvent Wash (Diesel #	Hours)						
13 Solvent Wash (Stripper)							
14 Exterior Tractor Wash				7			
15 Exterior Trailer Wash (w.	o Internal)						
16 Exterior Trailer Wash (w	ith Internal)						
17 Exterior Acid Brite Wash	)			Authorized Additi	onal Services:		
18 Hand Labor (# Men / # I	lours)						
19 Hydroblaster (# Hours)							
20 Solvent Wash (Green St	tripper)						
?1 Passivation				·		<u>n paragon di Came di Amandidia ny Taony di Amandra ny avondrana ny ara-</u>	
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ump Cleaning				CES Environmental Service thoroughness of the tank	es, Inc., Cleaning Division, n	nakes no guarantees with al elimination of interior re	respect to the sidues and/or
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#### ∠nvironmental Services

### TANK WASH WORK ORDER

ainer / Tank Cleaning Division 4 Griggs Rd. • Houston, TX 77021 25849 ne: (713) 676-1460 • Fax: (713) 676-1676 Date: Customer: Time: ctor 12:03 Need By: ler / Container Number | Dropped By: NTAINER TYPE: TOTE BIN ISO CONTAINER DRY BULK ROLL DOOR BOX ☐ VACUUM TRUCK TANK TRAILER ROLL TARP BOX ■ VACUUM BOX ☐ FRAC TANK POLY TANK Heel - Hazardous Heel - Non-Haz mpartment # Last Contained Drum / Rolloff **CLEANING CODES** WORK PERFORMED TANK ENTRY PERMIT Air Dry Oxygen (19.5% -23.5%) #1 Quick Rinse LEL (<10%) #3 ___ CO² (<35 ppm) Cold Water Rinse Toxic Vapor Hot Water Rinse Signature: Steam Only (Per Hour) Stripper Usage: Steam & Dry Rinse, Steam & Dry Comments: Detergent Wash, Rinse & Dry Caustic Wash & Dry Caustic Wash, Rinse & Dry Waste Water Surcharge Solvent Wash (Diesel # Hours) Solvent Wash (Stripper) **Exterior Tractor Wash** Exterior Trailer Wash (w/o Internal) Exterior Trailer Wash (with Internal) **Authorized Additional Services:** Exterior Acid Brite Wash Hand Labor (# Men / # Hours) D. ANI Hydroblaster (# Hours) OF TH Solvent Wash (Green Stripper) **Passivation** e Cleaning E FIRS ip Cleaning thoroughness of the tank washing procedure or the total elimination of interior residues and/or sture. Final inspection of the equipment remains the responsibility of the customer, and they hereby ase CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss. CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard. Date ected By: Print Name:_ Date

Signature:_

#### MON PETROLEUM CARRIERS, INC. PRESS HARD TANK TRUCK RUN TICKET USE A BALL POINT PEN WAYBILL CUSTOMER NO. CHARGE TO OPERATOR ENPRAY DISTRICT NO. 731 MILEAGE REPORT: TOTAL: END: TANK NO TICKET NO. 6077291 OIL LEVEL SALT & WATER GROSS BARRELS TEMP GAUGE FEET INCHES 14 INCH FEET INCHES 1 ST 2ND TEMPERATURE OBŞERVED GRAVITY SEDIMENT & WATER 0 TRUCK NO. 2621 OIL TRUCKED TO SIGNATURE) DATE TURNED ON PETROLEUM CARRIERS INC SHUT OFF HM PROPER SHIPPING NAME, HAZARD CLASS UN/NA NUMBER NO. UNITS/TYPE QUANTITY **ESTIMATE** PETROLEUM CRUDE OIL, 3, UN 1267 II (CRUDE OIL) **GROSS** ACTUAL NET IN THE EVENT OF AN EMERGENCY INVOLVING THIS SHIPMENT THAT ENDANGERS LIFE OR PROPERTY CHEMTREC 800-424-9300 REMARKS en STARIE Fluish =

HIS IS TO CERTIFY THAT THE HEREIN NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED, AND ABELED AND ARE IN PROPER CONDITION FOR TRANSPORTATION, ACCORDING TO THE APPLICABLE REGULATIONS OF THE EPARTMENT OF TRANSPORTATION.

#### IISSION PETROLEUM CARRIERS, INC., SHIPPER

L'GOVERED BY THIS RUN TICKET IS CONSIDERED TO BE RÉCEIVED BY MISSION PETROLEUM CARRIERS, INC. ON THE FIRST TE SHOWN ABOVE.

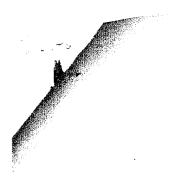


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#### her / Tank Cleaning Division 64 Griggs Rd. • Houston, TX 77021 25765 Phone: (713) 676-1460 • Fax: (713) 676-1676 Customer: Date: PO# Address: Tractor Trailer / Container Number | Dropped By: Need By: ROLL DOOR BOX DRY BULK CONTAINER TYPE: TOTE BIN ISO CONTAINER ☐ VACUUM TRUCK TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK POLY TANK Compartment # **Last Contained** Heel - Non-Haz Drum / Rolloff Heel - Hazardous **CLEANING CODES** TANK ENTRY PERMIT **WORK PERFORMED** Air Dry Oxygen (19.5% -23.5%) #1/1 2 #2 #3 #4 #5 2 Quick Rinse #1_____ #2_____ #3_____ #4______ #5_ LEL (<10%) CO² (<35 ppm) #1_____ #2____ #3_____ #4_____ 3 Cold Water Rinse Toxic Vapor Hot Water Rinse Signature: 5 Steam Only (Per Hour) Stripper Usage: 6 Steam & Dry 7 Rinse, Steam & Dry 8 Detergent Wash, Rinse & Dry Comments: 9 Caustic Wash & Dry 10 Caustic Wash, Rinse & Dry 11 Waste Water Surcharge 12 Solvent Wash (Diesel # Hours) 13 Solvent Wash (Stripper) 14 Exterior Tractor Wash 15 Exterior Trailer Wash (w/o Internal) 16 Exterior Trailer Wash (with Internal) **Authorized Additional Services:** 17 Exterior Acid Brite Wash 18 Hand Labor (# Men / # Hours) 19 Hydroblaster (# Hours) 20 Solvent Wash (Green Stripper) 21 Passivation Hose Cleaning CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or **Pump Cleaning** moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss. Cleaned By:_ CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard. Inspected By:_ Print Name:_____ Signature:_

Epvironmental Services

TANK WASH WORK ORDER



#### CRUDE OIL RUN TICKET GATHERING

TICKET#: 8303968 TANK#: 242666

BUSINESS MONTH: 2009-04

DISTRICT: 216

TANK SIZE: 436 bbls TANK HEIGHT: 16-00-00/04

STATE: TX

OPERATOR: 115674: SHERIDAN PROD CO LLC LEASE: 35802 SCHUMACHER WILHELM UT #1_H

FEDERAL #:

STATE CODE: 000322581 0000

LEGAL DESC:

COUNTY: BURLESON

SHIPPER: Flint Hills Resources, L.P. CARRIER: Flint Hills Resources, L.P. DESTINATION: 01711:Caldwell Tk Station

OTHER ID:

DATE

OIL LEVEL TANK BS&W BOTTOM TEMP FT IN FRACT FT IN FRACT TIME 04-30-2009 01:16 PM 08-03-03/04 67.0 00-06-00/04 CLOSE 04-30-2009 01:49 PM 01-04-00/04 69.0 00-08-00/04

INCRUSTATION FACTOR S&W ---OBSERVED---GRAVITY at 60 DegF (fraction) OR ADJUSTMENT GRAVITY TEMP 39.8 0.00600 1.00000 40.8

REID VAPOR GOV BBLS: 190.24 RVP GSV BBLS: 189.60 ADJUSTMENT PRESSURE 0.0 1.00000 NSV BBLS: 188,46

OPEN

EMERGENCY CONTACT: CHEMTREC 800/424-9300

DRIVER#: 0348

TRUCK#: 2802 COMMODITY

TRAILER#: 6310

QTY НМ

Petroleum Crude Oil, 3, UN1267, PG II

"This is to certify that the above named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Subject to section 7 of the terms and conditions of the applicable bill of lading. If this shipment is to be delivered to the consignee without recourse of the consignor, the consignor shall sign the following statement. The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges."

( REFERENCE ERG FOR EMERGENCY RESPONSE INFORMATION )

OPEN SIGNATURES

SEAL OFF:

CARRIER REPRESENTATIVE:

Ronnie Ott

SEAL ON:



2300 Hwy 365, Ste 400 Nederland, Texas 77627 Ph: 281-385-6700

Fax: 281-385-6705

Comments:

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Date:	7/30/2009	÷	TA .	
Send To:	CES Environmental			
Attention:	James Pharms			
Office Location:				
Fax Number:	713.676.1676			
Sent by:	Brenda			
Location:	Mont Belvieu, Texas			
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Last contained for Trlr 372 & MSDS

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### **GE-1143**

Molex Company (Marketer) P.O. Box 1151 Athens, AL 35612 Phone: (256) 233-5165

Emergency: CHEMTREC (800) 424-9300

Effective Date: 7/15/00

#### 1. COMPOSITION / INFORMATION ON INGREDIENTS:

Propylene oxide methanol adduct CAS# 037286-64-9

98%

#### 2. HAZARDS IDENTIFICATION:

#### EMERGENCY OVERVIEW

Yellow to dark brown liquid. Low odor. Causes eye irritation.

# POTENTIAL HEALTH EFFECTS (See Section 10 for toxicological data.)

EYE: May cause moderate eye irritation. May cause moderate corneal injury.

SKIN: Prolonged or repeated exposure not likely to cause significant skin irritation. A single prolonged exposure is not likely to result in the material being absorbed through the skin in harmful amounts. Prolonged or repeated exposure to very large amounts of component(s) in this mixture may cause narcosis (drowsiness).

INGESTION: Single dose oral toxicity is considered to be low. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing amounts larger than that may cause injury. Observations in animals include tremors and convulsions.

INHALATION: Excessive exposure may cause irritation of the eyes, upper respiratory tract, and lungs. Signs and symptoms of excessive exposure may be anesthetic or narcotic effects.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: Signs and symptoms of excessive exposure may be anesthetic or narcotic effects. Repeated excessive exposures may cause liver and possibly kidney effects.

TERATOLOGY (BIRTH DEFECTS): Birth defects are unlikely form the components, propylene glycol monomethyl ether and tripropylene glycol monomethyl ether. Exposures having no adverse effects on the mother should have no effects on the fetus.

#### 3. FIRST AID:

EYES: Irrigate with flowing water immediately and continuously for 15 minutes. Consult medical personnel.

SKIN: Wash off in flowing water or shower.

INGESTION: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

NOTE TO PHYSICIAN: No specific antidote. Supportive care. Treatments based on judgment of the physician in response to reactions of the patient.

### **GE-1143**

### 4. FIRE FIGHTING MEASURES:

Flammability Data

EXPLOSIVE

No

FLAMMABLE

No

COMBUSTIBLE

No

PYROPHORIC

No

FLASH POINT: 104 Deg. C (220 Deg. F) TEST METHOD: Cleveland Open Cup

AUTOIGNITION TEMPERATURE: No data

FLAMMABLE LIMITS AT NORMAL ATMOSPHERIC TEMPERATURE AND

PRESSURE (PERCENT VOLUME IN AIR): LEL - No data UEL - No data

NFPA RATINGS: Not established

HMIS RATINGS:

Health - 1 Flammability - 1 Reactivity -0

EXTINGUISHING MEDIA: Alcohol foam, carbon dioxide, dry chemical, water spray FIRE FIGHTING TECHNIQUES: Use water to cool containers exposed to fire. PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: Wear positive-pressure selfcontained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

### 5. ACCIDENTAL RELEASE MEASURES (See Section 14 for Regulatory Information)

REPORTABLE QUANTITY: Not applicable (Per 40 CFR 302,4)

### Spill Mitigation Procedures

Evacuate all non-essential personnel. Hazardous concentrations in air may be found in

AIR RELEASE: Vapors may be suppressed by the use of water fog. Contain all liquid for treatment and/or disposal as a (potential) hazardous waste.

WATER RELEASE: This material is lighter than and soluble in water. Notify all downstream users of possible contamination. Divert water flow around spill if possible and safe to do so.

LAND SPILL: Create a dike or trench to contain materials. Spill materials may be absorbed using sand, clay or other absorbent material. Do not place spill materials back in their original containers. Containerize and label all spill materials properly.

PERSONAL PROTECTION FOR EMERGENCY SPILL AND FIRE-FIGHTING SITUATIONS: In case of a fire, use normal fire fighting equipment including a NIOSH approved self-contained breathing apparatus (SCBA).

Additional protective clothing must be worn to prevent personal contact with this material. Those items include but are not limited to: boots, impervious gloves, splash-proof goggles and impervious clothing, i.e., chemically impermeable suit.

### MATERIAL SAFETY DATA SHEET

### **GE-1143**

### 6. HANDLING AND STORAGE:

DO NOT TAKE INTERNALLY, AVOID CONTACT WITH SKIN, EYES AND CLOTHING. UPON CONTACT WITH SKIN OR EYES, WASH OFF WITH WATER. AVOID BREATHING MIST OR VAPOR.

STORAGE CONDITIONS: Store in a cool, dry, well ventilated place.

Product Stability And Compatibility

SHELF LIFE LIMITATIONS: 5 years in drum or bulk

INCOMPATIBLE MATERIALS FOR PACKAGING: Fiber glass resins

INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT: Strong oxidizers

### 7. EXPOSURE CONTROLS / PERSONAL PROTECTION:

ENGINEERING CONTROLS: Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

Personal Protective Equipment

EYE/FACE PROTECTION: Use chemical goggles.

SKIN PROTECTION: When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material. Selection of specific items such as faceshield, gloves, boots, apron or full-body suit will depend on operation. RESPIRATORY PROTECTION: For most conditions, no respiratory protection should be needed; however, in misty atmospheres, use an approved mist respirator. If respiratory irritation is experienced, use an approved air-purifying respirator.

EXPOSURE GUIDELINE(S): None established.

### 8. PHYSICAL AND CHEMICAL PROPERTIES:

APPEARANCE: Yellow to dark brown liquid

ODOR: Mild ether

FREEZING POINT: No data BOILING POINT: 473°F, 245°C

**DECOMPOSITION TEMPERATURE: No data** 

SPECIFIC GRAVITY: 0.975 @ 25/25

VAPOR PRESSURE @ 25°C: <0.02 mm Hg

**SOLUBILITY IN WATER: Complete** 

**EVAPORATION RATE: <0.01 (Butyl acetate=1)** 

VAPOR DENSITY: Low

### **GE-1143**

### 9. STABILITY AND REACTIVITY:

Conditions Under Which This Product May Be Unstable TEMPERATURES ABOVE: 100 Deg. C (212 Deg. F)

MECHANICAL SHOCK OR IMPACT: No

ELECTRICAL (STATIC) DISCHARGE: Avoid sparks

OTHER: Avoid heat and open flames

HAZARDOUS POLYMERIZATION: Will not occur INCOMPATIBLE MATERIALS: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide,

acrid smoke and fumes

# 10. TOXICOLOGICAL INFORMATION: (See Section 2 for Potential Health Effects.)

SKIN: The dermal LD5O has not been determined.

INGESTION: The oral LD5O for rats is between 1260-2520 mg/kg.

MUTAGENICITY: For the components tested, in vitro mutagenicity studies were negative.

### 11. ECOLOGICAL INFORMATION:

### **Environmental Fate**

MOVEMENT & PARTITIONING: Log octanol/water partition coefficient (log Pow) is estimated to be low. Based largely or completely on information for similar material. DEGRADATION & PERSISTENCE: 20-day biochemical oxygen demand (BOD20) is 0.18 p/p. Biodegradation under aerobic static laboratory conditions is low (BOD20 or BOD28/ThOD between 2.5 and 10%)

ECOTOXICITY: Acute LC50 for fathead minnow (Pimephales promelas) is > 100 mg/L. Material is practically non-toxic to fish on an acute basis (LC50 greater than 100mg/L).

### 12. DISPOSAL CONSIDERATIONS:

If this product becomes a waste, it DOES NOT meet the criteria of a hazardous waste as defined under 40 CFR 261, in that it does not exhibit the characteristics of hazardous waste of Subpart C, nor is it listed as a hazardous waste under Subpart D. As a nonhazardous liquid waste, it should be disposed of in accordance with local, state, and federal regulations by incineration.

Care must be taken to prevent environmental contamination from the use of this material. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

### MATERIAL SAFETY DATA SHEET

### **GE-1143**

### 13. TRANSPORT INFORMATION:

This Material Is Not Regulated As A DOT Hazardous Material.

# 14. REGULATORY INFORMATION: (Not meant to be all-inclusive -- selected regulations represented)

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See other sections for health and safety information.

### U.S. REGULATIONS

SARA 313 INFORMATION: To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard A delayed health hazard

TOXIC SUBSTANCES CONTROL ACT (TSCA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

STATE RIGHT-TO-KNOW: This product is not known to contain any substances subject to the disclosure requirements of

New Jersey Pennsylvania

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### MATERIAL SAFETY DATA SHEET

### **GE-1143**

# 14. REGULATORY INFORMATION: (Not meant to be all-inclusive -- selected regulations represented) (cont.)

### CANADIAN REGULATIONS

WHMIS INFORMATION: The Canadian Workplace Hazardous Materials Information System (WHMIS) Classification for this product is:

D2B - eye or skin irritant

Refer elsewhere in the MSDS for specific warnings and safe handling information. Refer to the employer's workplace education program.

CPR STATEMENT: This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

HAZARDOUS PRODUCTS ACT INFORMATION: This product contains the following ingredients which are Controlled Products and/or on the Ingredient Disclosure List (Canadian HPA section 13 and 14):

Component

CAS Number

Amount (%w/w) 98%

Polypropylene glycol methyl ether

037286-64-9

### DISCLAIMER OF LIABILITY

The information on the MSDS was obtained from sources which we believe are reliable. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, REGARDING ITS CORRECTNESS. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and beyond our knowledge. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE, OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.



August 2009 Dear Customer, From time to time we receive vital public health advisories which we would like to share with you on a priority basis. Please provide us with an email address where these may be sent. Please fill out the form below. Your privacy will be protected. NOTE: Please FAX your completed form back to us at FAX: (281) 835-8900 / (800) 835-8900 We appreciate your friendship and the business you do with us! Sincerely, Pare St. Cen Name: Dep**t/**Title: _____ Co/Institution: Phone: eMail Address: Your Selections: Public health advisories Special offers (close-outs, new products etc) eNews (Labor saving tips, industry news) Info about Paperless transactions

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Tank Cleaning Division

1995 Pd. • Houston, TX 77021

1996 676-1460 • Fax: (713) 676-1676

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opoolod by		Date	Print Name:	·	Date

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V, TX 77075		Started		17			Started				
ISTRATIVE ONE HOUSTON A/C (713) 943-8250		Loading Finished	-	/	14:45		Unloading Finished		/_	07:35	
TRIP TIME OUT OF TERMINAL	1	Loading Driver		4	15:20		Unloading	/	-	09:5	
ate Time		Released		ļ 	15.25		Driver Réleased	/_	<u> </u>	08:00	
TRIP TIME RETURN TO TERMINAL		Total Time	9 /	<u>.</u>	45 Man	<i>(</i> )	Total Time Unloading			30m	9 20.
Date Time		EQUIPME	NT ORDER	ED:		i	Hose Ordered	i fi	Pur	np Blo	wer
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# CES Environmental Services, Inc.

4904 Griggs Road Houston, TX 77021 Phone: (713) 676-1460

Fax: (713) 676-1676

## Invoice

Date	Invoice #
3/25/2009	55099

Bill To	
Mission Petroleum Carriers, Inc. Attn: Accts Payable 8450 Mosley	
Houston, TX –77075	

		P.O. No.	Terms	Pro	oject
			Net 30		
Quantity	Description	1	Ticket#	Rate	Amount
	Cleaning of Tank Trailer #795 on 03/1	7/09			
1	Solvent Wash (Diesel) & Detergent W	ash, Rinse & Dry	17192	275.00	275.00
	5% Energy Surcharge			13.75	13.75
	1% Compliance Fee			2.8875	2.89
				,	
Thank you!	We appreciate your business.		Subtotal		\$291.64
Late Paymer	nt Policy: Any unpaid balances after 30 day of 1.5%.	s will accrue a monthly	Sales Tax (	\$0.00	
	equipment has been inspected by customer a CES shall not be liable for consequential and		Total		\$291.64

# CES Environmental Services Container / Tank Cleaning Division

TANK WASH WORK ORDER

4904 Griggs Rd. • Houston, TX 77021 Phone: (713) 676-1460 • Fax: (713) 676-1676

			<u> </u>			
PO #	Customer:	no Peto	roleum		Date: $(6-17-0)$	9
Torontory	Address:	UN ICIO	JIEU IVI		Time:	
Tractor 2616	Address:				12:15pm	n
Trailer / Container Number	Dropped By:				Need By:	
6050	1 Davi	d Lew	î C		***	. "
CONTAINER TYPE:	TOTE BIN RO	OLL DOOR BOX	☐ ISO CONT	AINER [	DRY BULK	
/		VACUUM BOX	FRAC TANK	POLY TAN	<i>′</i> —	RUCK
Compartment #	Last Conta		Heel - Hazardous		Drum / Rollof	•
1.	Crude	oil				
2		•				•
3		7 7 - <del>7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7</del>				
4		*.				
5		and the second second	<del>                                     </del>			
CLEANING CODES	WORK	PERFORMED		TANK ENTRY	LPERMIT	
1 Air Dry			Oxygen (19.5% -23.59			
2 Quick Rinse			LEL (<10%)	#1 0 #2	#3 #4 #5 #3 #4 #5	
3 Cold Water Rinse			CO ² (<35 ppm)	#1 <u>0</u> #2	#3 #4 #5 #3 #4 #5	
4 Hot Water Rinse			Toxic Vapor	#1_ <del></del> #2	#3 #4 #5	
5 Steam Only (Per Hour)			Signature 5			<u> </u>
6 Steam & Dry	<del> </del>	<u> </u>	Stripper Usage:			
7 Rinse, Steam & Dry			3,			
8 Detergent Wash, Rinse &	& Dry		Comments:	<u> </u>	*	1.2
9 Caustic Wash & Dry		in the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second se	4	1	11/2	
10 Caustic Wash, Rinse &	Dry		Wosh	1 Out	only	
11 Waste Water Surcharge		-4~	1			
12 Solvent Wash (Diesel #		-	1		¥.	
13 Solvent Wash (Stripper			1			
14 Exterior Tractor Wash	<i>'</i>				•••	
15 Exterior Trailer Wash (w	v/o Internal)	<u>, , , , , , , , , , , , , , , , , , , </u>				
16 Exterior Trailer Wash (w			1			
17 Exterior Acid Brite Was	<del></del>		Authorized Addit	ional Services:		
18 Hand Labor (# Men / #			-			
19 Hydroblaster (# Hours)						<u> </u>
20 Solvent Wash (Green S						
21 Passivation	ипроп)					
Hose Cleaning		<del> </del>				
Pump Cleaning			CES Environmental Servi	ices, Inc., Cleaning Division,	makes no guarantees with respec	t to the
<u> </u>			thoroughness of the tank moisture. Final inspection of t	washing procedure or the to	otal elimination of interior residues	and/or
Cleaned By:	AR ST note	6-18-09	from any allegations that	the equipment was imprope	sion, from any responsibility for claiming cleaned, resulting in damage of	r loss.
Cicumou By.	Date Date	- 0 4	damages o	r losses of equipment and/or	on, is in no manner responsible for r materials left in their yard.	апу
Inspected By:	Date	<u></u>	-			<del></del>
			Print Name:		Date	
			Cianoturo			
			Signature:			

# MISSION PETROLEUM CARRIERS, INC. TANK TRUCK RUN TICKET

### PRESS HARD USE A BALL POINT PEN

CHARGE TO	TEI	120		· .		сиѕтом	IER NO.	· · · · · · · · · · · · · · · · · · ·	· · · · · ·	WAYBI	LL	
OPERATOR /	ARR		- Sh	aver								
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LEASE NO.	263	9	DISTRI	205		1	380	3,	4mes	WK	suach	
MILEAGE		•	END:	37/32	7	BEGIN	N: 371	21	7 1	OTAL:	110	
MONTH	3	YEAR O 9	TANK NO.	01		TANK SIZ	400			TICKET NO.	61.06	6879
GAUGE	FEET		EVEL HES	1/4 INCH	TE	MP	FEE		WATER	3	GROSS B	ARRELS
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2 ND	3	1 8		2	8		0		6			
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OIL TRUCKED TO	3		. 1		1110	TRUCK N	10.			RAILER NO.	<u>,                                     </u>	
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ON	SIGNAT	RE OF WIT	NESS (OR	WAIVER NO.)		<del></del>	· · · · · · · · · · · · · · · · · · ·	OFFSE				
	FOR MIS	SION PETR	OLEUM CA	RRIERŞ, INC. (SIĞ	NATURE)			DATE	U/A-		TIME	
SHUT	х -	fam	er h	Jour	uf			6	-3-	<u> </u>	1031	7
OFF	- 1 /	FE OF WIT	NESS (OR	WAIVER NO.)				ONSE	AL /1/4			
NO. UNITS/T	YPE	НМ	PROPE	ER SHIPPING N	IAME, H	AZARD	CLASS U	N/NA N			QUANTI	TY
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CES Environmental Services
Container / Tank Cleaning Division
4904 Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

PO # Custome	0.0			Date:
	11.0	· <del></del>	<del></del>	Time
Tractor Address:				Time!   // . 4/1 Avr
Trailer // Container Number   Dropped	By:		:	Need By:
1,307	1 and Lun	À	· ·	
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	☐ ISO CONT	AINER C	DRY BULK
TANK TRAILER D ROLL TA		FRAC TANK	POLY TAN	
Compartment #	Last Contained	Heel - Hazardous		Drum / Rolloff
1Crude o.				
2				
3			<del> </del>	
4				
5				
CLEANING CODES	WORK PERFORMED		TANK ENTRY	PERMIT
1 Air Dry	WOTAKT ETA OTAMED	Oxygen (19.5% -23.5		#3#4#5
2 Quick Rinse		LEL (<10%)	#1 <b>/</b> 0 #2	#3#4#5
3 Cold Water Rinse		CO ² (<35 ppm)	#1#2	#3#4#5
4 Hot Water Rinse		Toxic Vapor	#1_6 #2	#3 #4 #5
5 Steam Only (Per Hour)		Signature:	MA	
6 Steam & Dry		Stripper Usage:		
7 Rinse, Steam & Dry		<b>-</b>		
8 Detergent Wash, Rinse & Dry		Comments:		
9 Caustic Wash & Dry				
10 Caustic Wash, Rinse & Dry	<del>                                     </del>	3		
11 Waste Water Surcharge				
12 Solvent Wash (Diesel # Hours)			• •	
13 Solvent Wash (Stripper)				
14 Exterior Tractor Wash			•	
15 Exterior Trailer Wash (w/o Internal)				
16 Exterior Trailer Wash (with Internal	)			
17 Exterior Acid Brite Wash		Authorized Addit	ional Services:	
18 Hand Labor (# Men / # Hours)				
19 Hydroblaster (# Hours)				
20 Solvent Wash (Green Stripper)				
21 Passivation				
Hose Cleaning				
Pump Cleaning		CES Environmental Serv	ices, Inc., Cleaning Division,	makes no guarantees with respect to the otal elimination of interior residues and/or
Cleaned By: B - H	Date 6-11-9	moisture. Final inspection of release CES Environmental from any allegations that	the equipment remains the re Services, Inc., Cleaning Divis the equipment was imprope	esponsibility of the customer, and they hereby sion, from any responsibility for claims arising orly cleaned, resulting in damage or loss. on, is in no manner responsible for any
		damages o	or losses of equipment and/o	r materials left in their yard.
Inspected By:	Date	Print Name:		Date
		Signature:		

Sunoco Logistics	Oklahoma (MCPL) Texas (SPL) Trucking	Product Run Ticket  West TX (SPLSC)  Nederland
P.O. Box 5090 Sugar Land, TX 77487-5090	PETROLEUM CRUDE O 3 (FLAMMABLE), UN 12	
Origin (Operator or Field	Location)	Delivery Receip
From/To (Lease or Comp	any Name)	RVP
Shipper - Sunoco Logisti	cs L.P.	Proving No.
Credit		Liquid Un N
Federal/Indian ID Numbe	r Coun	ty State
Description (Federal/India	an Lease Only)	
Tractor Number	Trailer Number	Destination (Company Name)
	Moved by	Destination (Field Location)
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Tank or Meter Number	Office Code	Grade Code Lease Code/Entry Number
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2nd		% 08
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# MISSION PETROLEUM CARRIERS, INC. TANK TRUCK RUN TICKET

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Sunoco Logistics	Texas (SPL)	Nederla	and 👍 🦠
	Trucking		
P.O. Box 5090	PETROLEUM CRUD	F OII	
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		<u> </u>	1801
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			1/X
Description (Federal/Indi	an Lease Only)		
Tractor Number	Trailer Number	Destination (Com	pany Name)
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Tank Siza	Moved by	Destination (Field	
DAY/MALP	mp Gravity Truck Other		
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10-12-124	0800 M		A3778
Tank or Meter Number	Office Code	Grade Code Lease	
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2nd i		1 %	
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Jeaning Division
Ad. • Houston, TX 77021
(713) 676-1460 • Fax: (713) 676-1676

PO# Customer				Date:	
Tractor Address:	Mission			Time:	<u>09</u>
2001					525an
Trailer / Container Number   Dropped E				Need By:	
	DOWLINGS CO	5+110			
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	ISO CONT		DRY BULK	
☐ TANKTRAILER ☐ ROLL TAI	RP BOX	☐ FRAC TANK	POLY TANK	VACU	UM TRUCK
Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / F	Rolloff
1 POSO DIL					
2 % % % % % % % % % % % % % % % % % % %					
344 1044 10					
4					
5					
CLEANING CODES	WORK PERFORMED		TANK ENTRY F	PERMIT	
1 Air Dry		Owigen /19 5% -23 59	%) #1 <u>20 %</u> #2		#5
2 Quick Rinse		LEL (<10%)	#1#2	and the second second second	
3 Cold Water Rinse		CO ² (<35 ppm)	#1#2		#5
4 Hot Water Rinse		Toxic Vapor	#1 #2	#3#4	#5
5 Steam Only (Per Hour)		Signature:			
6 Steam & Dry		Stripper Usage:			
7 Rinse, Steam & Dry					
8 Detergent Wash, Rinse & Dry		Comments:			
9 Caustic Wash & Dry					
10 Caustic Wash, Rinse & Dry					
11 Waste Water Surcharge					
12 Solvent Wash (Diesel # Hours)					
13 Solvent Wash (Stripper)					
14 Exterior Tractor Wash					
15 Exterior Trailer Wash (w/o Internal)					
16 Exterior Trailer Wash (with Internal)					
17 Exterior Acid Brite Wash		Authorized Addit	ional Services:		eren i
18 Hand Labor (# Men / # Hours)					
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21 Passivation					
Hose Cleaning					
Pump Cleaning		thoroughness of the tank	ces, Inc., Cleaning Division, washing procedure or the to	al alimination of intorior r	aniduan and/or
Cleaned By:	Date 6-1-09	moisture. Final inspection of t release CES Environmental S from any allegations that CES Environmental Se	he equipment remains the re Services, Inc., Cleaning Divis the equipment was improper ervices, Inc., Cleaning Divisio r losses of equipment and/or	sponsibility of the custom ion, from any responsibility ty cleaned, resulting in da n, is in no manner respor	er, and they hereby ty for claims arising amage or loss.
Inspected By:	Date	Print Name:	Miase Aspi	lv Date 6	1 29
		Signature	1/4	1	



### Bill of Lading / Delivery Manifest & Receipt

If this document evidences a delivery into shipper's consignee's truck, it is not a bill of lading, but a manifest and receipt for the delivery. The shipper certifies that the herein named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Carrier certifies that the container supplied by the carrier for this shipment is a proper container for transportation of the products described below and it will not cause any of the prohibited activities published in 40 CFR and 80.78. The Carrier did not observe any unusual or unsatisfactory loading conditions.

CARRIER BY:

P.O. #:

HAZARDOUS MATERIAL EMERGENCY PHONE - CALL CHEMTREC 800-424-9300 EMERGENCY SPILL PROCEDURES, HAZARD INFORMATION, SHIPPERS CERT & EPA MESSAGES ARE PRINTED ON REVERSE SIDE.

Manifest:	200905046	Carrier: MISSION TRANSPORT
ate:	05/30/09	Carrier No: 33 Loaded At:
time in:	17:40:00	Truck No: 2851 TERRE RIVERS, TX (B) - OS INV.
ime out:	18:29:00	Trailer: 797 F.O. BOX 490 TERES RIVERS, TX 78071
Trans:	TRUCK/TRAILMR	Contract: \$637375 EPA#4006
Sol	T 152	Ship To:
opak Taum	inal Deer Park, TX	Vopak Terminal Deer Park, IX
/O Mynas	USA, Inc	c/c Mynas USA, Inc Youak Terminal Deer Park,
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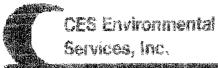
rank Cleaning Division
Griggs Rd. • Houston, TX 77021
none: (713) 676-1460 • Fax: (713) 676-1676

Tractor	PO # Customer	:	/		Date:
Trailer / Container Number   Dropped gr.   Need By:    Trailer / Container Number   Dropped gr.   Need By:	1///57	ED FNUIRON MENTA	-/		1/30/09
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TANK TRAILER ROLL TARP BOX VACUUM BOX FRAC TANK POLY TANK ACCOUNT FRUCK COMpartment # Last Gontained Heel - Hazardous Heel - Non-Haz Drum (SIGN)  1 2 3 4 5 CLEANING CODES WORK PERFORMED TANK ENTRY PERMIT 1 Air Dry 2 Quick Rinse 1 CLE (-10%) #1 P2 #3 #4 #5 LEL (-10%) #1 P2 #3 #4 #5 LEL (-10%) #1 P2 #3 #4 #5 Steam Confy (Per Hour) 5 Steam Confy (Per Hour) 6 Steam & Dry 7 Rinse, Steam & Dry 8 Detergent Wash, Rinse & Dry 9 Caustic Wash & Dry 10 Caustic Wash & Dry 11 Waste Water Surcharge 12 Solvent Wash (Siripper) 14 Exterior Trailer Wash (with Internal) 15 Exterior Trailer Wash (with Internal) 16 Exterior Trailer Wash (with Internal) 17 Exterior Trailer Wash (With Internal) 18 Hand Labor (# Men / # Hours) 20 Solvent Wash (Green Stripper) 21 Passivation 19 Hydroblaster (# Hours) 20 Solvent Wash (Green Stripper) 21 Passivation 10 Cleaning 20 Cies Environmental Services. Inc. Cleaning Internal Property on the structure of the bear washing process on the total environce of the trail respect to the Processing of the bear washing process on the trail and property and respect to the Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Control and Processing Co	Trailer / Container Number Dropped				Need By:
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Compartment # Last Gontained Heel - Hazardous Heel - Non-Haz Drum (Califf)  1	TANK TRAILER	RP BOX VACUUM BOX	FRAC TANK	POLY TAN	K VACUUM TRUCK
2 3 4 5 CLEANING CODES WORK PERFORMED TANK ENTRY PERMIT Oxygen (19.5%, 23.5%) #	Compartment #	Last Gontained	Heel - Hazardous	Heel - Non-Haz	
2 3 4 5 CLEANING CODES WORK PERFORMED TANK ENTRY PERMIT Oxygen (19.5%, 23.5%) #	1	1)IESFHWATER		(0 gol)	7-06
CLEANING CODES WORK PERFORMED  Air Dry  Oxygen (19.5% 23.5%) # T. CH2 #3 #4 #5 LEL (<10%) #1 22 #3 #4 #5 LEL (<10%) #1 22 #3 #4 #5 LEL (<10%) #1 22 #3 #4 #5 Storm Only (Per Hour)  Signature:  Signature:  Signature:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comments:  Comm	2	<del></del>			
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Inspected By:	Cleaned By:	Date 1-30-09	CES Environmental Se	rvices, Inc., Cleaning Divisio	n, is in no manner responsible for any
Inspected By: Date Print Name: Date			damages or	losses of equipment and/or	materials left in their yard.
	Inspected By:	Date	Print Name		Date

## vironmental Services

er / Tank Cleaning Division
Griggs Rd. • Houston, TX 77021
one: (713) 676-1460 • Fax: (713) 676-1676

PO # 2	HOAD STORA	< Envir		Date: / 07 /09
Tractor Address:			Time:	
3-10				
Trailer / Container Number Dropped I	By:			Need By:
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	☐ ISO CONTA	AINER [	DRY BULK
☐ TANK TRAILER ☐ ROLL TA		FRAC TANK	POLY TAN	K VACUUM TRUCK
	Last Contained	Heel - Hazardous		
1 o.lin water				
2				
3				
4				
5				
CLEANING CODES	WORK PERFORMED		TANK ENTRY	PERMIT
1 Air Dry		Oxygen (19.5% -23.5%	6) #100 / #2	#3 #4 #5
2 Quick Rinse		LEL (<10%)	#1 2 #2	#3 #4 #5
3 Cold Water Rinse		CO ² (<35 ppm)	#1 #2	#3#4#5
4 Hot Water Rinse		Toxic Vapor	, #1 <u>//</u> #2	#3 #4 #5
5 Steam Only (Per Hour)		Signature:	HC	
6 Steam & Dry		Stripper Usage:		
7 Rinse, Steam & Dry		7		· · ·
8 Detergent Wash, Rinse & Dry		Comments:		
9 Caustic Wash & Dry				
10 Caustic Wash, Rinse & Dry				
11 Waste Water Surcharge			·	
12 Solvent Wash (Diesel # Hours)				
13 Solvent Wash (Stripper)		]		
14 Exterior Tractor Wash				
15 Exterior Trailer Wash (w/o Internal)		]		
16 Exterior Trailer Wash (with Internal)				
17 Exterior Acid Brite Wash		Authorized Addition	onal Services:	
18 Hand Labor (# Men / # Hours)				
19 Hydroblaster (# Hours)				
20 Solvent Wash (Green Stripper)				
21 Passivation				
Hose Cleaning				
Pump Cleaning		CES Environmental Service thoroughness of the tank	ces, Inc., Cleaning Division, washing procedure or the to	makes no guarantees with respect to the otal elimination of interior residues and/or esponsibility of the customer, and they hereby
Cleaned By:	Date	release CES Environmental S from any allegations that the CES Environmental Se	ervices, Inc., Cleaning Division of the equipment was improper rvices, Inc., Cleaning Division	esponsibility of the customer, and they hereby sion, from any responsibility for claims arising try cleaned, resulting in damage or loss. on, is in no manner responsible for any r materials left in their yard.
Inspected By:	Date	Print Name:		Date
		Signature:		



White (Generally Relum Copy) Yellow (Transporter Copy)

Bill Of Lading #:

80692

	A. Service	es, inc.		
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	NSIGNED TO			CARRIER:
	S Environmen		ices, inc	
	M Griggs Rd.		<i>,</i>	3900 Underwood Rd.
Hoi	iston , TX 770	121		La Porte , TX 77571
132	nnetice of the officer	Total	Unit	Description of Materials, Special Marks, and Exceptions
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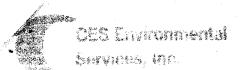
Pink (Raceleing Facility Copy) Golden Red (Generator 1st Copt)

# vironmental Services er / Tank Cleaning Division

TANK WASH WORK ORDER

Griggs Rd. • Houston, TX 77021 one: (713) 676-1460 • Fax: (713) 676-1676

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Tractor Addr	ress:			Time:/	
Trailer / Container Number Drop	oped By:			Need By:	
	Ronie Malle		•		
CONTAINER TYPE: TOTE	BIN ROLL DOOR BOX	☐ ISO CONTA	INER	DRY BULK	
	LL TARP BOX	☐ FRAC TANK	POLY TAN	K PVACU	IUM TRUCK
Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum /	Rolloff
1 poly water					
2					
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CLEANING CODES	WORK PERFORMED		TANK ENTRY	PERMIT	
1 Air Dry		Oxygen (19.5% -23.5%	) #1 <u>21. 0</u> #2	#3 #4	#5
2 Quick Rinse	A A C	LEL (<10%)	#1 #2	#3 #4	#5
3 Cold Water Rinse	<u> </u>	CO ² (<35 ppm)	#1 #2	_ #3 #4	#5 <u></u>
4 Hot Water Rinse		Toxic Vapor	#1_ <del></del> #2	#3 #4	#5
5 Steam Only (Per Hour)		Signature: C	<u> </u>		
6 Steam & Dry		Stripper Usage:			
7 Rinse, Steam & Dry					
8 Detergent Wash, Rinse & Dry		Comments:			
9 Caustic Wash & Dry					
10 Caustic Wash, Rinse & Dry					
11 Waste Water Surcharge					
12 Solvent Wash (Diesel # Hours	3)				
13 Solvent Wash (Stripper)					
14 Exterior Tractor Wash		_			
15 Exterior Trailer Wash (w/o Inte	— <del>   </del>	4			
16 Exterior Trailer Wash (with Inte	ernal)				vi. Teori soores especialista de
17 Exterior Acid Brite Wash		Authorized Addition	onai Services: —		
18 Hand Labor (# Men / # Hours)	)			· · · · · · · · · · · · · · · · · · ·	
19 Hydroblaster (# Hours)			· · · · · · · · · · · · · · · · · · ·		
20 Solvent Wash (Green Stripper	<u>"                                      </u>				······································
21 Passivation					
Hose Cleaning	<del></del>	CES Environmental Service	os Inc. Cleaning Division	makae na guarantaga wi	th respect to the
Pump Cleaning		thoroughness of the tank w moisture. Final inspection of the	vashing procedure or the to e equipment remains the re	tal elimination of interior sponsibility of the custon	residues and/or ner, and they hereby
20	1 0. 0	release CES Environmental Se	ervices, Inc., Cleaning Divis ne equipment was improper	ion, from anv responsibil	ity for claims arising
Cleaned By:	Date121.09		vices, Inc., Cleaning Division losses of equipment and/or		
Inspected By:	Date	Print Name:		Date	
		i iiin ivallie		Dale	
		Signature:			



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Oranial	Shipper	Provided	Short	Form	Great	mi dill	of Lading	- Not Nepr	Stratile -	- Domesti	18.

445-4887979-53 + 828-3868 -	Waste Management
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Collin W Hardington	**************************************
Spine , TA 77306	
1280 Chile Hill	110

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CES Environmental Services, inc

4964 Grays 70

Meadon TX 77021

CARRIER:

AAA Flexible Pipe Cleaning 3900 Uniferwood Rd.

La Poite TX 77574

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Cardingon Facility. DES Emitianmental Services Inc.

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ank Cleaning Division

gs Rd. • Houston, TX 77021

(713) 676-1460 • Fax: (713) 676-1676

Customer		·		Date:
Customer	Milstea	1		12·16·08
Tractor Address:				Time:
V411			.,	9:58a
Trailer / Container Number Dropped		^		Need By:
the s	Suff-			Waiting
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	ISO CONT	AINER [	DRY BULK
☐ TANK TRAILER ☐ ROLL TA		FRAC TANK	POLY TANK	
Compartment #	Last Contained	Heel - Hazardous		Drum / Rolloff
1 (1/1)				
$\frac{\mathcal{U}}{2}$				
3				
4				
5		1 1 1		
CLEANING CODES	WORK PERFORMED		TANK ENTRY F	PERMIT
1 Air Dry		Oxygen (19.5% -23.59		³ #3 #4 #5
2 Quick Rinse		LEL (<10%)	#1#2	#3#5
3 Cold Water Rinse		CO ² (<35 ppm)	#1 <u>1</u> #2	#3#4#5
4 Hot Water Rinse	. J ₁	Toxic Vapor	#1_0 #2	#3#4#5
5 Steam Only (Per Hour)		☐ Signature ≤/		<u> </u>
6 Steam & Dry		Stripper Usage:		
7 Rinse, Steam & Dry		1		,
8 Detergent Wash, Rinse & Dry	• /	Comments:		
9 Caustic Wash & Dry				
10 Caustic Wash, Rinse & Dry				•
11 Waste Water Surcharge		]	·	.*
12 Solvent Wash (Diesel # Hours)	,	]		
13 Solvent Wash (Stripper)		1		
14 Exterior Tractor Wash				
15 Exterior Trailer Wash (w/o Internal)		1		,
16 Exterior Trailer Wash (with Internal)				
17 Exterior Acid Brite Wash		Authorized Additi	ional Services:	
18 Hand Labor (# Men / # Hours)			····	
19 `Hydroblaster (# Hours)				
20 Solvent Wash (Green Stripper)				
21 Passivation	•			
Hose Cleaning		*		
Pump Cleaning		thoroughness of the tank	washing procedure or the to	makes no guarantees with respect to the tal elimination of interior residues and/or sponsibility of the customer, and they hereby
Cleaned By:	Date 12-16-08	release CES Environmental Sefections that	Services, Inc., Cleaning Divis the equipment was improper	ion, from any responsibility for claims arising rly cleaned, resulting in damage or loss.
Inspected By:		Print Name:		yan and day and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second a second and a second and a second and a second and a second a second and a second and a second and a second and a second and a second and a second and a second and a second and a second a second and a second and a second and a second and a second and a
		I IIIIL IAGIIIC		Date
		Signature:		·

### **CES Environmental** Services, Inc.

Bill Of Lading #:

78093

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Non Dot Regulated Material Water w/ Hydrocarbons

Original – Shipper Provided Short Form Straight Bill of Lading – Not Negotiable – Domestic									
SHIPPED FROM:									
Milstead Environmental	11a) HOU-1123								
29707 W. Hawthorne	11b)								
Spring, TX 77386									
(281) 367-3535	110)								

The property described below, in apparent good order, except as noted (content and condition of packages unknown), marked, consigned, and destined as indicated below, whic said carrier (the word carrier being understood throughout this as meaning any person or corporation authorized to be in possession of the property under the contract) agrees to carry to its unusual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. This Bill of Lading is a receipt for goods; it is not of itself a contract of carriage. It is mutually agreed, as to each carrier of all or as to any said over all or any portion of said route to destination, and as to each par any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions contained in the applicable contract between shipper and carrier or intermediary.

For payment: Charges to be billed to Shipper or the "Billed to" party are set forth in the governing contract with Shipper. No charges other than those contained therein may be bi to Shipper or the "Billed to" party without prior written consent of Shipper. The extra copy of this Bill of Lading, furnished at the time of shipment, must be attached to the freight b submitted to Shipper or the "Billed to" party and sent to:

### **CONSIGNED TO:**

CES Environmental Services, Inc. 4904 Griggs Rd.

Houston, TX 77021

**CARRIER:** 

11c)

AAA Flexible Pipe Cleaning 3900 Underwood Rd. La Porte, TX 77571

This is to certify that the product stated below are properly classified, described, packaged, marked and labeled and is in proper condition for transportation according to the applicable regulations of the Department of Transportation. If this Shipment moves between to ports by a carrier by water, the law requires that the Bill of Lading shall state whetl it is "carrier's or shipper's weight."

Intermodal Certificate: All information required by Federal Highway Administration regulations at 49 CFR 390.54® implementing the Intermodal Safe Container Act of 1992 is set forth on the face of this bill of lading. The shipper name herein is the tendering party.

Haz Cont		ainer	Total	Unit	Descript	on of Materials, Special Marks,	and Exceptions	
	No.	Туре	Quantity	Wt/Voi				
No 1 TT 1000		G	, , , , , , , , , , , , , , , , , , ,	Recyclable Hydrocarbon and W	ater Mixture	<del></del>		
		-						
Ship	per : _	Milstea	d Enviro	nmenta	al			
Per	:							
Carr			xible Pip		ning			
Per	:	<del>-</del>			Signature :		Date :	
Rec	eiving	Facilit	y CES	Enviro	nmental Services	, Inc.		
Per	:	·			Signature :		Date :	
White	e (Genera	tor Return	Сору)	Yellow	(Transporter Copy)	Pink (Receiving Facility Copy)	Golden Rod (Generate	or 1st Copy)

## ironmental Services

### TANK WASH WORK ORDER

/Tank Cleaning Division
ggs Rd. • Houston, TX 77021
/(713) 676-1460 • Fax: (713) 676-1676

⊙#   Cu	istomer:		Date: 124/13
Tractor Ad	dress:		Time:
Trailer / Container Number Dro	opped By:	$\forall n \Delta z$	Need By:
CONTAINER TYPE: TOT	E BIN ROLL DOOR BOX	☐ ISO CONTAINER	DRY BULK
	OLL TARP BOX  VACUUM BOX	☐ FRACTANK ☐ POLY TA	
Compartment #	Last Contained	Heel - Hazardous Heel - Non-Ha	
1 FATTY Arie	7		
2			
3			
4			
5			
CLEANING CODES	WORK PERFORMED	TANKENTR	Y PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 #2	#3#4#5
2 Quick Rinse		LEL (<10%) #1/ #2	#3 #4 #5
3 Cold Water Rinse		CO ² (<35 ppm) #1 #2 #2	#3#5
4 Hot Water Rinse		Toxic Vapor #2#2	#3#4#5
5 Steam Only (Per Hour)		Signature:	
6 Steam & Dry		Stripper Usage:	
7 Rinse, Steam & Dry			
8 Detergent Wash, Rinse & Dry	У	Comments:	
9 Caustic Wash & Dry			٠.
10 Caustic Wash, Rinse & Dry			
11 Waste Water Surcharge			
12 Solvent Wash (Diesel # Hou	urs)		
13 Solvent Wash (Stripper)			
14 Exterior Tractor Wash			
15 Exterior Trailer Wash (w/o Ir	nternal)		
16 Exterior Trailer Wash (with I	nternal)		
17 Exterior Acid Brite Wash		Authorized Additional Services	
18 Hand Labor (# Men / # Hou	rs)	:	
19 Hydroblaster (# Hours)			
20 Solvent Wash (Green Stripp	per)		
21 Passivation			
Hose Cleaning			
Pump Cleaning		CES Environmental Services, Inc., Cleaning Divis thoroughness of the tank washing procedure or the	ne total elimination of interior residues and/or
Cleaned By:	Date 9/0489	moisture. Final inspection of the equipment remains the release CES Environmental Services, Inc., Cleaning I from any allegations that the equipment was improved the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the compa	operly cleaned, resulting in damage or loss.  vision, is in no manner responsible for any
Inspected By:	Date	Print Name:	Date
		Signature:	

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is not the Origi	nal Bill of Lading, nor a copy or o	t that a bill of lading has been issued luplicate, covering the property	Shipper's No. 695	92-1	Page 1 OF 1
hamed herein, and	is intended solely for filing or rec	ord	Agent's No.		IOFI
	classifications and lawfully filed lariffs in effect Pacific Chemicals LLC (shipp	on the date of the receipt by the carrier of the property per/Consigner)  AT  CROSS	described in the Original Bill of ETT, AR	Lading	Date 02/25/09
property to destination, if o over all or any portion of sa	n its route, otherwise to deliver to another carri	ood order, except as noted below, and is marked, con- er on the route to said destination. Each carrier of, and service required hereby in accordance with the applic sight Bill of Lading set forth (1) if this is a rail or rail-wa on.	d any party at any time interested	tin all or any of s	aid property
To: 2092-01 HU	NTSMAN PETROCHEMICA	L CORP.	(Consignee)	If charges are p "Prepaid."	repaid, write or stamp here, PREPAID
SHIP TO ADDRESS: 3892 US HV	VY 90	<u> </u>		Received to apply in prep	ayment of the charges on the ed hereon
CITY, STATE, ZIP: DAYTON, T	X 77535 USA	en en en en en en en en en en en en en e		Per	Agent or Cashier
ROUTE:				(The signature I amount prepaid Charges	nere acknowledges only the )
DELIVERING CARRIER:	DIZINIO COMPANIX	DESTINATION:		Advanced \$	
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DESCRIPTION FOR FREIG	HT RATING PURPOSES:		RAIL CAR TRIP LEA	SED	gia-Pacific Chemicals LLC Signature of Consignor)
		SPECIAL INSTRUCTIONS	TO CONSIGNEE		dignature of consignory
	26/2009 11:30 AM	8-2975 & SEND W/SHIPMENT.		'L CODE #	700364.
	THE ABOVE NAMED MATERIALS ARE PRO	PERLY CLASSIFIED, DESCRIBED, PACKAGED, MA LE REGULATIONS OF THE DEPARTMENT OF TRA		RE IN PROPER	
APPROPRIATE PL OFFERED/CORRE AFFIXED	ACARDS EMERGENCY R	RESPONSE OSHA TAG(S)/	LABEL(S) APPLIED SPECIFIC LABEL,T	AG,OR BA	\G
Georgia-Pacific ( Per 133 Peachiree Si. N.	Chemicals LLC E. Allanta, Georgia 30303	POST OFFICE ADDRESS AND TELEPHONE NU HWY 82/PAPERMILL ROAD CROSSETT, AR 71635 870-567-7200			
	ACARDS CORRECTLY AFFIXED	<i>f</i>	EMERGENCY GU	IDE BOOK L	OCATED IN CAB
Carrier:		Per			
This Bill of Lading is to be si	gned by the shipper and agent of carrier issuing	g same:)			CH 7069-L (1/97)

IN CASE OF EMERGENCY CALL CHEMTREC TOLL FREE (800) 424-9300 DAY OR NIGHT

அழுத்கு - Houston, TX 77021 24533 Phone: (713) 676-1460 • Fax: (713) 676-1676 Date: PO# Customer: I.T. 86:23.09 Address: Need By: Trailer / Container Number Dropped By: ASAY. 1266 CONTAINER TYPE: TOTE BIN BOLL DOOR BOX ISO CONTAINER DRY BULK VACUUM TRUCK ROLL TARP BOX ☐ FRAC TANK POLY TANK ■ TANK TRAILER VACUUM BOX Compartment # Last Contained Heel - Hazardous Heel - Non-Haz Drum / Rolloff DBE. TANK ENTRY PERMIT **CLEANING CODES** WORK PERFORMED 1 Air Dry Oxygen (19.5% -23.5%) #130 10 10 19.5% | #36 10 1 #4 2 Quick Rinse LEL (<10%) #1<u>0</u> #2<u>/)</u> #3__ CO² (<35 ppm) 3 Cold Water Rinse Toxic Vapor 4 Hot Water Rinse Signature: 5 Steam Only (Per Hour) Stripper Usage: 6 Steam & Dry 7 Rinse, Steam & Dry Comments: 8 Detergent Wash, Rinse & Dry 9 Caustic Wash & Dry 10 Caustic Wash, Rinse & Dry 11 Waste Water Surcharge 12 Solvent Wash (Diesel # Hours) 13 Solvent Wash (Stripper) 14 Exterior Tractor Wash 15 Exterior Trailer Wash (w/o Internal) 16 Exterior Trailer Wash (with Internal) **Authorized Additional Services:** 17 Exterior Acid Brite Wash 18 Hand Labor (# Men / # Hours) 19 Hydroblaster (# Hours) 20 Solvent Wash (Green Stripper) 21 Passivation Hose Cleaning CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any electronest black the cultivation to the the customer and the services of the theory of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of the customer of **Pump Cleaning** from any allegations that the equipment was improperly cleaned, resulting in damage or loss. Cleaned By: CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard. Inspected By:_ Date Print Name:

Signature:



### INVISTA Material Safety Data Sheet

DBE-3

130000000123

Revised 1-MAY-2004

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

Formula

: CH3OOC(CH2) nCOOCH3, n=2,3 and 4

Molecular Weight

: Avg. 173

Tradenames and Synonyms

DIBASIC ESTER-3 DIMETHYL ADIPATE

HEXANEDIOIC ACID, DIMETHYL ESTER

Company Identification

MANUFACTURER/DISTRIBUTOR

INVISTA S.à r.l. INVISTA Building

4123 East 37th Street North

Wichita, KS 67220

PHONE NUMBERS

Product Information: 1-877-446-8478 (outside the U.S. 770-792-4221)

Transport Emergency: CHEMTREC 1-800-424-9300(outside U.S.703-527-3887)

Medical Emergency : 1-613-348-3616

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material

CAS Number

DIMETHYL ADIPATE

627-93-0 85-95

DIMETHYL GLUTARATE

1119-40-0

HAZARDS IDENTIFICATION

Potential Health Effects

DBE-3 may irritate skin, eyes, nose and throat. May cause

blurry vision.

HUMAN HEALTH EFFECTS:

Skin contact may cause skin irritation with discomfort or

rash. Eye contact may cause eye irritation with

Print Date: 8 - 12 - 2004

Customer Customer	175			10-23-09
Tractor Address:	Channelui	en Ty	7	Time: 18:15
Trailer / Container Number Dropped	By: C. ROY	<u></u>	······································	Need By:
CONTAINER TYPE: TOTE BIN  TANK TRAILER ROLL TA	RP BOX VACUUM BOX	☐ ISO CONT	AINER D	
Compartment #	Last Contained	Heel - Hazardous		Drum / Rolloff
	MINP.			
2			<del></del>	
3			· · · · · · · · · · · · · · · · · · ·	
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CLEANING CODES	WORK PERFORMED		TANK ENTRY F	PERMIT
1 Air Dry		Oxygen (19.5% -23.5%	6) #1/9,0 #2	#3 #4 #5
2 Quick Rinse		LEL (<10%)	#1#2	#3 #4 #5
3 Cold Water Rinse		CO ² (<35 ppm)	#1#2	#3#4#5
4 Hot Water Rinse		Toxic Vapor	#1 #2	#3#4#5
5 Steam Only (Per Hour)		Signature:		
6 Steam & Dry		Stripper Usage:		
7 Rinse, Steam & Dry		1		
8 Detergent Wash, Rinse & Dry		Comments:		
9 Caustic Wash & Dry		1		
10 Caustic Wash, Rinse & Dry		1		
11 Waste Water Surcharge	2	1		
12 Solvent Wash (Diesel # Hours)				
13 Solvent Wash (Stripper)				
14 Exterior Tractor Wash		]		
15 Exterior Trailer Wash (w/o Internal)				
16 Exterior Trailer Wash (with Internal)				
17 Exterior Acid Brite Wash		Authorized Additi	onal Services:	
18 Hand Labor (# Men / # Hours)				
19 Hydroblaster (# Hours)				
20 Solvent Wash (Green Stripper)		<u> </u>		
21 Passivation				
Hose Cleaning				
Pump Cleaning		thoroughness of the tank	washing procedure or the tot	nakes no guarantees with respect to the al elimination of interior residues and/or
Gleaned By: 5.E.	Date 6-23-0cg	release CES Environmental S from any allegations that	ervices, Inc., Cleaning Divisi the equipment was improper	sponsibility of the customer, and they hereby on, from any responsibility for claims arising by cleaned, resulting in damage or loss. In, is in no manner responsible for any materials left in their yard.
Inspected By:	Date	Print Name:	Kox.	Date
		i inici value.	1)A	5
		Signature:	シーク	1
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., 1X 77021 • Fax: (713) 676-1676

Customer			Date:
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.actor Address:			Time:
Trailer / Container Number Dropped E	 Ву:		Need By:
965			ASA D.
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	☐ ISO CONTAINER ☐	DRY BULK
TANK TRAILER D ROLL TAN		FRACTANK POLYTAN	
	Last Contained	Heel - Hazardous Heel - Non-Haz	Drum / Rolloff
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CLEANING CODES	WORK PERFORMED	TANK ENTRY	PERMIT
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2 Quick Rinse		LEL (<10%) #1 #2	
3 Cold Water Rinse		CO ² (<35 ppm) #1 #2	
4 Hot Water Rinse		Toxic Vapor #1#2	
5 Steam Only (Per Hour)		Signature: 15-41	
6 Steam & Dry		Stripper Usage:	
7 Rinse, Steam & Dry			
8 Detergent Wash, Rinse & Dry	/	Comments:	
9 Caustic Wash & Dry		1	
10 Caustic Wash, Rinse & Dry		1	
11 Waste Water Surcharge	/	1	
12 Solvent Wash (Diesel # Hours)			
13 Solvent Wash (Stripper)	<i></i>	]	
14 Exterior Tractor Wash			
15 Exterior Trailer Wash (w/o Internal)			
16 Exterior Trailer Wash (with Internal)		·	
17 Exterior Acid Brite Wash		Authorized Additional Services:	
18 Hand Labor (# Men / # Hours)			
19 Hydroblaster (# Hours)			
20 Solvent Wash (Green Stripper)	/		
21 Passivation			
Hose Cleaning	1/50		
Pump Cleaning		CES Environmental Services, Inc., Cleaning Division, n thoroughness of the tank washing procedure or the tot moisture. Final inspection of the equipment remains the res release CES Environmental Services, Inc., Cleaning Division from any allegations that the equipment was improper	ponsibility of the customer, and they hereby
Cleaned By:	Date <u>(0.9</u>	CES Environmental Services, Inc., Cleaning Division damages or losses of equipment and/or in	is in no manner responsible for any
Inspected By:	Date	Print Name: A - Vas qu	Date
		Signature:	

### al Services

eaning Division

Pd. • Houston, XX 77021

Pd. • Fax: (713) 676-1676

PO# Customer	73			Date: 6/26/49
Tractor Address:				Time: 8,30 AM.
171				
Trailer / Container Number Dropped E	By:			Need By:
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	□ ISO CONT		DRY BULK
TANKTRAILER ROLL TAI	RP BOX	FRAC TANK	POLY TANK	VACUUM TRUCK
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5	,		= .	
CLEANING CODES	WORK PERFORMED		TANK ENTRY F	PERMIT
1 Air Dry		Oxygen (19.5% -23.5%	%) #1 0,0 /#2	#3#5
2 Quick Rinse	·	LEL (<10%)		#3#4#5
3 Cold Water Rinse	·	CO ² (<35 ppm)	#1#2	
4 Hot Water Rinse		Toxic Vapor	_#1_ <b></b> #2	
5 Steam Only (Per Hour)		Signature:	٧	·
6 Steam & Dry		Stripper Usage:		
7 Rinse, Steam & Dry				
8 Detergent Wash, Rinse & Dry		Comments:		
9 Caustic Wash & Dry	4.		•	w., •
10 Caustic Wash, Rinse & Dry			•	
11 Waste Water Surcharge				
12 Solvent Wash (Diesel # Hours)				
13 Solvent Wash (Stripper)				
14 Exterior Tractor Wash				
15 Exterior Trailer Wash (w/o Internal)				
16 Exterior Trailer Wash (with Internal)		·		
17 Exterior Acid Brite Wash		Authorized Additi	onal Services:	
18 Hand Labor (# Men / # Hours)			· · · · · · · · · · · · · · · · · · ·	
19 Hydroblaster (# Hours)				
20 Solvent Wash (Green Stripper)				Appel Comment
21 Passivation	-			V-174 City
Hose Cleaning				·
Pump Cleaning				nakes no guarantees with respect to the
Cleaned By:	Date 6 - 26 - 09	moisture. Final inspection of the release CES Environmental Secretary from any allegations that CES Environmental Secretary.	ne equipment remains the restervices, Inc., Cleaning Division the equipment was impropert	al elimination of interior residues and/or ponsibility of the customer, and they hereby on, from any responsibility for claims arising y cleaned, resulting in damage or loss.  n, is in no manner responsible for any materials left in their yard.
Inspected By:	Date	Print Name:	CONTRACTOR AND AND AND AND AND AND AND AND AND AND	
		Signature:		

## ..nental Services

### TANK WASH WORK ORDER

ank Cleaning Division aggs Rd. • Houston, TX 77021 ane: (713) 676-1460 • Fax: (713) 676-1676

PO # Customer: 535450	It's			Date: 6-28-09		
Tractor Address:				Time:		
Trailer / Container Number Dropped E		Need By:				
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	ISO CONT		DRY BULK		
TANK TRAILER D ROLL TAF	RP BOX	FRAC TANK	POLY TANK	☐ VACUUM TRUCK		
Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff		
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2						
3						
4						
5						
CLEANING CODES	WORK PERFORMED		TANK ENTRY PE	ERMIT		
1 Air Dry		Oxygen (19.5% -23.5%	6) #1-0-1 #2	#3 #4 #5		
2 Quick Rinse	ė .	LEL (<10%)		#3 #4 #5		
3 Cold Water Rinse		CO ² (<35 ppm)		#3 #4 #5		
4 Hot Water Rinse		Toxic Vapor	#1 0 #2	#3 #4 #5		
5 Steam Only (Per Hour)		Signature:	<u> </u>			
6 Steam & Dry		Stripper Usage:				
7 Rinse, Steam & Dry						
8 Detergent Wash, Rinse & Dry		Comments:				
9 Caustic Wash & Dry						
10 Caustic Wash, Rinse & Dry		]				
11 Waste Water Surcharge	/					
12 Solvent Wash (Diesel # Hours)		]				
13 Solvent Wash (Stripper)		]	20 44	and the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second o		
14 Exterior Tractor Wash						
15 Exterior Trailer Wash (w/o Internal)						
16 Exterior Trailer Wash (with Internal)						
17 Exterior Acid Brite Wash		Authorized Addition	onal Services:			
18 Hand Labor (# Men / # Hours)						
19 Hydroblaster (# Hours)						
20 Solvent Wash (Green Stripper)						
21 Passivation						
Hose Cleaning						
Pump Cleaning		Ithoroughness of the tank :	letot edi ro erubeccion pridenw	kes no guarantees with respect to the elimination of interior residues and/or		
Cleaned By:	Date 6 28 9	from any allegations that t	ervices, inc., Cleaning Division, he equipment was improperly o	onsibility of the customer, and they hereby from any responsibility for claims arising cleaned, resulting in damage or loss.		
box	Dato	damages or	losses of equipment and/or ma	s in no manner responsible for any aterials left in their yard.		
Inspected By:	Date	Print Name:		Date 6-28.09		
		Signature:	- L	many group married and the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the stat		

## **South Coast Terminals** 9317 EAST AVENUE S

HOUSTON, TX 77012

Tr.

SHIP DATE ORDER DATE 06/26/09 B/L NO. 24959

CHEVRON ORONITE CO. 10285 HWY 23 SOUTH BELLE CHASSE LA 70037

CARRIER

PAGE 1 OF 1 CHEVRON ORONITE COMPANY LLC ATTN: PROCUREMENT SPECIALIST, LOGIS 4800 FOURNACE PLACE BELLAIRE TX 77401

02502 CUST. ORDER	NO	trut	FRE	IGHT PR	EPAID CAR#QTRAILER#	942 SEAL 631	15 1	63116
QUANTITY ORDERED	QUANTITY SHIPPED	PACKAGING		H M	DESCRIPTION	ari, Padaga jir Al	IN LBS HET WEIGHT	IN LBS GROSS WEIGHT
45000 44,100	0	1			NOT DOT REGULATED AL-304			77200 H
VI -					: TEMP 80 (		N.	33100 # 4 <del>5000</del> 44,100 #
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This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. MARCOSG

Signature

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

MARCOSG

Signature of Consigner

The correct weight is as shown above subject to verification in accordance with any applicable agreement with carriers or their authorized agent.

Received, subject to the classifications and lawfully filed tariffs in effect on the date of the issue of this Bill of Lading, the property described below in apparent good order, subject to all the terms and conditions of the Domestic Bill of Lading set forth in the classification or tariff which governs the transportation of the shipment.

COD Amt: \$ CARRIER SHIPPER Third Party Freight Bill To: PLACARDED 🔲 MSDS and COA **PLACARDS OFFERED** SHIPPER **South Coast Terminals** NAME OF PLACARD RECEIVED 🔀 DRIVER PLEASE INITIAL CHEVRON CHEMICAL 90 P.O.BOX 70 BELL CHASE, LA 70037 MARCOSG PER **AGENT** FOR EMERGENCY RESPONSE INSTRUCTIONS PER CALL CHEMTREC at 1-800-424-9300

# Container Tank Cleaning Division 4904 Griggs Rd. • Houston, TX 77021

### TANK WASH WORK ORE

Phone: (713) 676-1460 • Fax: (713)	676-1676			2400
PO # Customer	·			Oate: 6-27-09
Tractor 173 Address:			Ţ	ïme:
Trailer / Container Number Dropped B	By: William		N	leed By:
CONTAINER TYPE: TOTE BIN	RP BOX VACUUM BOX	☐ ISO CONTA ☐ FRAC TANK	AINER II I	DRY BULK  VACUUM TRI
Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 AL-30	)4 .			
2 Not Oot	Regulated -			
3				
4				
5				
CLEANING CODES	WORK PERFORMED		TANK ENTRY PE	RMIT
1 Air Dry		Oxygen (19.5% -23.5%	6) #1 <u>20.                                    </u>	#3 #4 #5
2 Quick Rinse		LEL (<10%)		#3 #4 #5
3 Cold Water Rinse		CO ² (<35 ppm)	4,2	#3 #4 #5
4 Hot Water Rinse		Toxic Vapor	· · · · · · · · · · · · · · · · · · ·	#3 #4 #5
5 Steam Only (Per Hour)		Signature: 🔑	-4	
6 Steam & Dry		Stripper Usage:		
7 Rinse, Steam & Dry				
8 Detergent Wash, Rinse & Dry		Comments:		•
9 Caustic Wash & Dry		7		
10 Caustic Wash, Rinse & Dry		7		
11 Waste Water Surcharge				
12 Solvent Wash (Diesel # Hours)	A 100			
13 Solvent Wash (Stripper)	7.			
14 Exterior Tractor Wash				
15 Exterior Trailer Wash (w/o Internal)				
16 Exterior Trailer Wash (with Internal)				
17 Exterior Acid Brite Wash	·	Authorized Addition	onal Services:	
18 Hand Labor (# Men / # Hours)		<b>1</b>		
19 Hydroblaster (# Hours)				
20 Solvent Wash (Green Stripper)				
21 Passivation				
Hose Cleaning			to constitue and the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of	
Pump Cleaning		have unbrose of the tank	waching procedure or the total	kes no guarantees with respect the elimination of interior residues are applicable of the guestomer and the
Cleaned By: B-H	Date	release CES Environmental S from any allegations that	Services, Inc., Cleaning Division the equipment was improperly	onsibility of the customer, and the , from any responsibility for claim cleaned, resulting in damage or lo is in no manner responsible for a aterials left in their yard.
Inspected By:	Date	Print Name:		Date

	_					<u> </u>		11 (11 (11 (11 (11 (11 (11 (11 (11 (11	
PO# 53 451	Customer:		7	-			Date:	6/2	8/09
Tractor	Address:	· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·	<del>-                                    </del>	Time;	7	7 -7
143	Address.			<b>S</b>		<u></u>	1 iiiio į	126	20
Trailer / Container Number	Dropped E	By:				1	Need	Ву:	
693									
CONTAINER TYPE:	TOTE BIN	<b>□</b> _R	OLL DOOR BOX	<b>(</b>	ISO CONT	AINER [	DRY	BULK	
	ROLL TAP	10-4-2-	VACUUM BO		☐ FRAC TANK	POLY TAN			UM TRUCK
Compartment #		Last Cont			Heel - Hazardous	and the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of t		Drum / I	The same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the sa
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CLEANING CODES		WORK	PERFORMED			TANK ENTRY	PERMI	T	
1 Air Dry				<del>"  </del>	Oxygen (19.5% -23.5%		#3	#4	#5
2 Quick Rinse		· v. v.			LEL (<10%)	#1 0 #2	#3	"¬ #4	#5
3 Cold Water Rinse			A .		CO ² (<35 ppm)	#1 0 #2	#3	#4	#5
4 Hot Water Rinse			A/		Toxic Vapor	#1 0 #2	#3	#4	#5
5 Steam Only (Per Hour)			7/		Signature:	<i>fe</i>	·		
6 Steam & Dry			/		Stripper Usage:				
7 Rinse, Steam & Dry			,						
8 Detergent Wash, Rinse &	Dry	17	/		Comments:			, e 10 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s
9 Caustic Wash & Dry		, /							
10 Caustic Wash, Rinse &	Dry								
11 Waste Water Surcharge	A								
12 Solvent Wash (Diesel #	Hours).								<b>∀.</b>
13 Solvent Wash (Stripper)							- "		
14 Exterior Tractor Wash									
15 Exterior Trailer Wash (w.	/o Internal)								
16 Exterior Trailer Wash (w	ith Internal)								
17 Exterior Acid Brite Wash	1				Authorized Addition	onal Services:		Santa, papang Silan tang Sila	
18 Hand Labor (# Men / # i	Hours)								<u> </u>
19 Hydroblaster (# Hours)									
20 Solvent Wash (Green St	tripper)								
21 Passivation									
Hose Cleaning									
Pump Cleaning		13 C. (1) (1) (1) (1)			CES Environmental Service thoroughness of the tank	ces, Inc., Cleaning Division, washing procedure or the to	makes no gu	uarantees with	n respect to the
Cleaned By:		Date	6-289	_	moisture. Final inspection of the release CES Environmental S from any allegations that in CES Environmental Services	e equipment remains the re	sponsibility of sion, from and rly cleaned, in on, is in no m	of the custome y responsibility resulting in da nanner respon	er, and they hereby ty for claims arising amage or loss.
Inspected By:		Date	)	<del>-</del> ,	Print Namet <del>√∠</del>	hoon Statemen	C	)ate_ <i>{_/_</i> /_	25/07
				. (	Print Namel	Lola	**************************************	1	1. 7/

..., 1X 77021 ---1460 • Fax: (713) 676-1676

Customer	"17<		Date: 6-25-09
370	1/2		<del>11/</del>
Address:			Time: 19.35
/ Container Number Dropped	By:		Need By:
707	en en en en en en en en en en en en en e		ASAP
TAINER TYPE: TOTE BIN	ROLL DOOR BOX	☐ ISO CONTAINER	DRY BULK
TANK TRAILER ROLL TA		☐ FRAC TANK ☐ POLY TAN	and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s
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LEANING CODES	WORK PERFORMED	TANK ENTRY	PERMIT
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uick Rinse		LEL (<10%) #1 #2	#3#4#5
old Water Rinse		CO ² (<35 ppm) #1 0 #2	#3 #4 #5
ot Water Rinse		Toxic Vapor #1 #2	#3#4#5
team Only (Per Hour)		Signature: Ju	
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inse, Steam & Dry			
etergent Wash, Rinse & Dry		Comments:	
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Caustic Wash, Rinse & Dry		1	
Waste Water Surcharge		1	
Solvent Wash (Diesel # Hours)		1	
Solvent Wash (Stripper)			
Exterior Tractor Wash			
Exterior Trailer Wash (w/o Internal)			
Exterior Trailer Wash (with Internal)		1	
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Solvent Wash (Green Stripper)			
assivation			
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p Cleaning		CES Environmental Services, Inc., Cleaning Division, thoroughness of the tank washing procedure or the to	tal elimination of interior residues and/or
ned By: JL	Date 6 25 - 9	moisture. Final inspection of the equipment remains the re release CES Environmental Services, Inc., Cleaning Divis from any allegations that the equipment was imprope CES Environmental Services, Inc., Cleaning Division damages or losses of equipment and/or	esponsibility of the customer, and they hereby sion, from any responsibility for claims arising rly cleaned, resulting in damage or loss.
ected By:	Date	Print Name: Tomn Frank	øg - se
		Signature: January A. T.	Frank /

## nental Services

TANK WASH WORK ORDER

eaning Division
• Houston, TX 77021
676-1460 • Fax: (713) 676-1676

Cust	omer: /5				· · · · · · · · · · · · · · · · · · ·	Date: /	109
actor Addr 2920	ess:					Time:	/
Trailer / Container Number Drop	ped By:					Need By:	
CONTAINER TYPE: TOTE  TANK TRAILER	BIN C	ROLL DOOR BOX		ISO CONT	AINER DOLY TAN	DRY BULK	CUUM TRUCK
Compartment #	Last Co	ontained	Hee	l - Hazardous	Heel - Non-Haz	Drum	/ Rolloff
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5							
CLEANING CODES	WO	RK PERFORMED			TANK ENTRY	PERMIT	
1 Air Dry			Ox	ygen (19.5% -23.59	%) # <del>}</del> \- 0 #2	#3 #4	#5
2 Quick Rinse				EL (<10%)	#1#2	#3#4_	
3 Cold Water Rinse				O ² (<35 ppm)	#1_0 #2	#3#4_	#5
4 Hot Water Rinse				xic Vapor	#1 7 #2	#3 #4_	#5
5 Steam Only (Per Hour)			Si	gnature:	ンレ		
6 Steam & Dry			Stri	oper Usage:	<del>" </del>		
7 Rinse, Steam & Dry					•		
8 Detergent Wash, Rinse & Dry			Con	nments:			12-1-12-1-12-1-12-12-12-12-12-12-12-12-1
9 Caustic Wash & Dry							
10 Caustic Wash, Rinse & Dry				11 = 1	= 10		
11 Waste Water Surcharge				NLI	- 13 h	, <i>U</i>	
12 Solvent Wash (Diesel # Hours	)			1110/09	ED P		
13 Solvent Wash (Stripper)				11410	N) AN	1	
14 Exterior Tractor Wash				(-(			
15 Exterior Trailer Wash (w/o Inte							
16 Exterior Trailer Wash (with Inte	ernal)					and the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second o	
17 Exterior Acid Brite Wash		-	Auti	norized Additi	onal Services:		
18 Hand Labor (# Men / # Hours)				····			
19 Hydroblaster (# Hours)	<b>.</b>			·			
20 Solvent Wash (Green Stripper	)	· · · · · · · · · · · · · · · · · · ·					
21 Passivation				311 L	, , , , , , , , , , , , , , , , , , , ,		
Hose Cleaning			CE	S Environmental Servi	ces, Inc., Cleaning Division,	makes on quarantees	with respect to the
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Cleaned By:	[	Date 0-45.4	release fro	CES Environmental S m any allegations that	Services, Inc., Cleaning Division the equipment was imprope ervices, Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Division Inc., Cleaning Inc., Cleaning Division Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Cleaning Inc., Clean	nion, from any responsi rly cleaned, resulting	sibility for claims arising in damage or loss.
Inspected By:/		Date	Print	Name:		Date	
			Sian	ature:			

70690-1 med by the Agent. 1 OF 1 Agent's No. subject to the classifications and lawfully filed tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading ΑT 06/14/09 CROSSETT, AR Georgia-Pacific Chemicals LLC (Shipper/Consigner) roperty described below has been recieved by Carrier in apparent good order, except as noted below, and is marked, consigned and destined as indicated below. Carrier agrees to carry the perty to destination, if on its route, otherwise to deliver to another carrier on the route to said destination. Each carrier of, and any party at any time interested in, all or any of said property af all or any portion of said route to destination agrees to perform every service required hereby in accordance with the applicable contract(s), if any, between Georgia-Pacific and Carrier, and any subject to the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) if this is a rail or rail-water shipment, in the Uniform Freight Classification, and (2) if this is a motor carrier shipment, in the National Motor Freight Classification. If charges are prepaid, write or stamp here. (Consignee) 2067-01 LAMBERTI USA, INC. **PREPAID** \$ Received US 59 @ COUNTY RD 212 to apply in prepayment of the charges on the property described hereon CITY, STATE, ZIP: Agent or Cashier HUNGERFORD, TX 77448 USA (The signature here acknowledges only the ROUTE: amount prepaid ) Charges Advanced \$ DESTINATION: DELIVERING CARRIER LEE'S TRUCKING COMPANY *If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether CAR INITIALS AND NUMBER: SEAL NUMBER(S) 2920 it is "carrier's or shipper's weight" NO. AND TYPE WEIGHT BASIC DESCRIPTION AND ASSOCIATED INFORMATION OF PACKAGES Subject to Correction GROSS ** NON-REGULATED ** 1 TT XTOL 300 TALL OIL FATTY ACIDS PTBP-0300 NET All transportation provided All transportation provided hereunder is subject to the terms of Section 7 of the respective bills of lading identified above as if Georgia-Pacific initialed the Section 7 provision on the face of that Bill of Lading with respect to each shipment described below. Georgia-Pacific Chemicals LLC DESCRIPTION FOR FREIGHT RATING PURPOSES: RAIL CAR TRIP LEASED (Signature of Consignor) TO CONSIGNEE SPECIAL INSTRUCTIONS PO# 4500272421 Deliver On 06/15/2009 3 pm Load 45,000 lbs. COA to accompany shipment. XTOL 300 - PRODUCT CODE "M099259-000000" "M099701-000000" THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION. APPROPRIATE PLACARDS **EMERGENCY RESPONSE** OSHA TAG(S)/LABEL(S) APPLIED INFORMATION ATTATCHED OFFERED/CORRECTLY PRODUCT SPECIFIC LABEL, TAG, OR BAG **AFFIXED** POST OFFICE ADDRESS AND TELEPHONE NUMBER OF ORIGIN Georgia-Pacific Chemicals LLC HWY 82/PAPERMILL ROAD / P.O. BOX 520 CROSSETT, AR 71635 870-567-7200 133 Peachtree St. N.E. Atlanta, Georgia 30303 APPROPRIATE PLACARDS CORRECTLY AFFIXED EMERGENCY GUIDE BOOK LOCATED IN CAB Per Carrier: CH 7069-L (1/97) (This Bill of Lading is to be signed by the shipper and agent of carrier issuing same.) IN CASE OF EMERGENCY CALL CHEMTREC TOLL FREE (800) 424-9300 DAY OR NIGHT

Shipper's No.

Page

ORDER must be legibly filled in, in ink, in indelible Pencil, or in

### TANK WASH WORK ORDER

Container / Tank Cleaning Division
4904 Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

PO# Custo	mer:			Date:
	EES			13/10/09
Tractor Addre	) DORAJO AR	<i>-</i>		Time:
Trailer Container Number Dropp	ed By:			Need By:
2285				
CONTAINER TYPE: TOTE B	IN ROLL DOOR BOX	☐ ISO CONTA	AINER [	DRY BULK
	TARP BOX VACUUM BOX	FRAC TANK	POLY TAN	IK UVACUUM TRUCK
Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 FI45LU FROTA	ER			
2				
3				
4				
5				
CLEANING CODES	WORK PERFORMED		TANK ENTRY	PERMIT
1 Air Dry		Oxygen (19.5% -23.5%	6) # 20% #2	#3 #4 #5
2 Quick Rinse		LEL (<10%)	#1 #2	#3#4#5
3 Cold Water Rinse		CO <del>2</del> (<35 ppm)	#1 #2	#3#5
4 Hot Water Rinse		Toxic Vapor	ø ^{#1} ∕ #2	#3#4#5
5 Steam Only (Per Hour)		Signature:	5	
6 Steam & Dry		Stripper Usage:		
7 Rinse, Steam & Dry				
8 Detergent Wash, Rinse & Dry		Comments:	*\	\
9 Caustic Wash & Dry		METHA	and M	REP 1.1
10 Caustic Wash, Rinse & Dry				REP LAC CONS L. GEXT. GIVE PS. : F WECKES HKY,
11 Waste Water Surcharge		Good now	U. \	# CV
12 Solvent Wash (Diesel # Hours)		TRESSURE U	UP TO 10	
13 Solvent Wash (Stripper)		1/Accuse To	Est, int	4-EXT
14 Exterior Tractor Wash		CHANGE CLE	avout CA	PS, IT WEDES MAY,
15 Exterior Trailer Wash (w/o Interi	nal)		7006	
16 Exterior Trailer Wash (with Inter	nal)		- Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of the Commence of	
17 Exterior Acid Brite Wash		Authorized Addition	· //_	
18 Hand Labor (# Men / # Hours)		2. Fitting	N/0	
19 Hydroblaster (# Hours)			and the second second	The second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon
20 Solvent Wash (Green Stripper)		100	7	
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Pump Cleaning		thoroughness of the tank v	vashing procedure or the to	makes no guarantees with respect to the otal elimination of interior residues and/or
		release CES Environmental Se	ervices, Inc., Cleaning Divi	esponsibility of the customer, and they hereby sion, from any responsibility for claims arising orly cleaned, resulting in damage or loss.
Cleaned By: 5V	Date	CES Environmental Ser	vices, Inc., Cleaning Divisi	on, is in no manner responsible for any or materials left in their yard.
Inspected By:	Date	S. Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Con		-1 1
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#### vironmental Services

#### TANK WASH WORK ORDER

ar / Tank Cleaning Division Griggs Rd. • Houston, TX 77021 one: (713) 676-1460 • Fax: (713) 676-1676

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PO #	Customer:	m 1)				Date: / 04
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1	Address:					Time:
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Trailer / Container Number C	Propped B	y:				Need By:
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TANK TRAILER U	ROLL TAF	RP BOX 🔲 VACU	JUM BOX	☐ FRAC TANK	POLY TAN	K VACUUM TRUCK
Compartment #		_ast Contained		Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
TDetorowt.		4		:		
2						
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4						
5						
CLEANING CODES		WORK PERFO	RMED		TANK ENTRY	PERMIT
1 Air Dry				Oxygen (19.5% -23.5%	%) #1 <i>][[[</i> #2	#3 #4 #5
2 Quick Rinse				LEL (<10%)	#1 <u>//</u> #2	_ #3 #4 #5
3 Cold Water Rinse				CO ² (<35 ppm)	#1 <u>4)</u> #2	_ #3 #4 #5
4 Hot Water Rinse				Toxic Vapor	#1 #2	#3 #4 #5
5 Steam Only (Per Hour)				Signature:	S-E	
6 Steam & Dry				Stripper Usage:		
7 Rinse, Steam & Dry	•					
8 Detergent Wash, Rinse & I	Ory		-	Comments:		
9 Caustic Wash & Dry						
10 Caustic Wash, Rinse & Di	ry					
11 Waste Water Surcharge						
12 Solvent Wash (Diesel # H	ours)					
13 Solvent Wash (Stripper)				·		
14 Exterior Tractor Wash				1 .		
15 Exterior Trailer Wash (w/o	Internal)	- V- III		]		
16 Exterior Trailer Wash (with	n Internal)					
17 Exterior Acid Brite Wash				Authorized Additi	onal Services:	
18 Hand Labor (# Men / # Ho	ours)				apparature.	
19 Hydroblaster (# Hours)						
20 Solvent Wash (Green Stri	pper)					
21 Passivation						anni kanangan je ingan di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di salah di sala
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Pump Cleaning			i	CES Environmental Service	ces, Inc., Cleaning Division,	makes no guarantees with respect to the tal elimination of interior residues and/or
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Cleaned By:		4/2	167			ion, from any responsibility for claims arising ty cleaned, resulting in damage or loss.
Cleaned by:	<del></del>	Date / / = 2	1/2/	GES Environmental Se damages or	rvices, Inc., Cleaning Division r losses of equipment and/or	n, is in no manner responsible for any materials left in their yard.
Inspected By:		Date		D 1:1 M		Data
, ,		· · · · · · · · · · · · · · · · · · ·	<del></del>	Print Name:		Date
				Signature:	<u> </u>	

## ght Bill of Lading, adopted by Carriers in Official, Southern, Western and erritories, March 15, 1922, as amended August 1, 1930 and June 15, 1941.)

#### _L OF LADING - SHORT FORM - ORIGINAL - NOT NEGOTIABLE

ubject to the contracts, classifications, and tariffs in effect of the issue of this Bill of Lading.

441 - 1 0 0 - 00- (0, 1-0, 0, 0, 1-)
SHIPPING DOCUMENT
MDSE RETURN REPORT
CONTAINER RETURN REPORT

150357401 CUSTOMER P.O. NUMBER 628526

VANGAS CITY VS SISA 102 JTD ORDER DATE	E 17 455 5000	Harcros Chemicals Inc,			
The property decscibed below, in apparent good order, except as noted (contents and condition of contents of package: unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understool throughout this continuat as meaning any person or corporation in possession of the property under the contract) agree to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property, what every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Dessit Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, of (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.  (2) in the applicable motor carrier classification at raiff if this is a motor carrier shipment, of the classification or tariff if which governs the transportation of this shipment, and the said terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.		Subject to Section 7 of conditions, if this shipment is to be delivered to the without recourse on the consignor, the consignor shall sign the following. The carrier shall not make delivery of this shipment without payment of frei other lawful charges.  Harcros Chemicals Inc.  (SIGNATURE OF CONSIGNOR)			
CARRIER: Ph: 713-796-8000 00207825	IF FREIGHT CHARGES, ARE TO BE PREPAID, WRITE OR STAMP HERE, "TO BE PREPAID."	C.O.D.  COLLECT ON DELIVERY REMIT TO: HARCROS CHEMICALS INC  COD CHARGE TO BE PAID BY SHIPPER CONSIGNEE HARCROS WILL ACCEPT COMPANY CHECK			
NO OFFKGS ORDERED OF CONTAINER DESCRIPTION  TY SOAP. NEC. LIQUID  A NMFC 48580-3 CLAS  NP 9 BULK DELIVERY/#  19841 200011 V:  45000 LB CofA  MSDS Required With Cust Signature: (INQUIRE WITH SALES R **LOAD 4/20 & 9 A.M.*  A HARCROS PICK UP NUM PICK UP 4-20-09 FOR D TRUCK MUST HAVE WEIGH  DO YOU HAE ANY EMPTY NEED TO BE PICKED UP? SIGNATURE  HARCROS WILL BE CLOSE Total Weight	A500 SS 55  The Shipment ***  REP ON PRICING  BER: 705043**  CONTAINERS THAT  YES  D ON MAY 25TH  4500	ON BOARD?  NESPONSE GO ON BOARD?  NESPONSE GO ON BOARD?  NESPONSE GO ON BOARD?  DRIVER INITIALS  HARCROS BULK DELIVERIE  I CERTIFY THAT CONNECTIONS TO COPIETING AND STORAGE TANKS AND CORRECT AND READY FOR UNIO. AND OF COMMODITY NAMED AND WILL ACCION THE NET WEIGHT AND OR VOLUME THIS DELIVERY IN FULL			

Permanent Post-Office Address of Shipper: T-5017 (10/98)

Harcros Chemicals Inc, Shipper,

SHIPPEREOMER SIGNATURE CARRIER/
5200 SPEAKER RD (SPEC)

DELIVERY / CARRIER

IN CASE OF EMERGENCY CALL CHEMTREC AT (800)-424-9300

## mental Services

Cleaning Division

dd. • Houston, TX 77021

3) 676-1460 • Fax: (713) 676-1676

Customer	EB'S Touk	Acres de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la constante de la co		Date:	100
Tractor Address:				Time:	,
2510		· · · · · · · · · · · · · · · · · · ·		7:2	/
Trailer / Container Number Dropped E	3y:		k	Need By:	?
CONTAINER TYPE: TOTE BIN  TANK TRAILER ROLL TAI	ROLL DOOR BOX	☐ ISO CONT	AINER DOLY TAN	DRY BULK K D VACU	JUM TRUCK
Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum /	Rolloff
1 FATTY Acid.	1 3 A to 111	3 44 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		**	
2					
3					
4					
5,					
CLEANING CODES	WORK PERFORMED		TANK ENTRY	PERMIT	
1 Air Dry		Oxygen (19.5% -23.5%	%) #1 <i>710</i> #2	#3 #4	<u>#5</u>
2 Quick Rinse		LEL (<10%)	#1 #2	#3 #4	#5
3 Cold Water Rinse		CO ² (<35 ppm)	#1 <u>/</u> #2	#3#4	#5
4 Hot Water Rinse		Toxic Vapor	#1 <u> </u>	#3#4	#5
5 Steam Only (Per Hour)		Signature	<i></i>		
6 Steam & Dry		Stripper Usage:			
7 Rinse, Steam & Dry					10.74
8 Detergent Wash, Rinse & Dry		Comments:			
9 Caustic Wash & Dry		CRA	64 B1) WICK 11	1 ARIA	
10 Caustic Wash, Rinse & Dry					T during
11 Waste Water Surcharge			WICK AN	K1-45	
12 Solvent Wash (Diesel # Hours)		<b>*</b> *	(	····	
13 Solvent Wash (Stripper)	· \$ ( )				
14 Exterior Tractor Wash		4			
15 Exterior Trailer Wash (w/o Internal)		4			
16 Exterior Trailer Wash (with Internal)		Authorized Additi	anal Cantiaga	de out the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the secon	
17 Exterior Acid Brite Wash	· · · · · · · · · · · · · · · · · · ·	Authorized Additi	/		1
18 Hand Labor (# Men / # Hours)  19 Hydroblaster (# Hours)	7.4	13	10 CAR GA	1545 +	1
		Done gh	sket		
<ul><li>20 Solvent Wash (Green Stripper)</li><li>21 Passivation</li></ul>			:		
Hose Cleaning					
Pump Cleaning		CES Environmental Servi	ces, Inc., Cleaning Division,	makes no quarantees wi	th respect to the
Cleaned By:	Date 4/14/08	thoroughness of the tank moisture. Final inspection of the release CES Environmental S from any allegations that CES Environmental Se	washing procedure or the to	tal elimination of interior sponsibility of the custon ion, from any responsibil rly cleaned, resulting in d on, is in no manner respo	residues and/or ner, and they hereb ity for claims arising amage or loss. nsible for any
Inspected By:	Date	Print Name:		Date	

#### TBILL OF LADING—SHORT FORM—Original—Not Negotiable ct to the classifications and tariffs in effect on the date of issue of this Original Bill of Lading. SHIPPER'S No. 19696 CARRIER'S NO. 1906/4 Name of Carrier INTERNATIONAL PAPER COMPANY From CONTAINERBOARD MFG. - MANSFIELD MILL iigned, and destined as indicated below, which said carr ses to carry to its usual place of delivery at said destina (Mail or Street address of Consignee—For purposes of notification Only.) SPANICAL Consigned to County Delivery Address★ Car or Vehicle Initials 2510 **Delivering Carrier** Subject to Section 7 of conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: KIND OF PACKAGE, DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS *WEIGHT (SUBJ. TO CORR.) CLASS OR RATE CHECK NO PACKAGES MC The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges. (Signature of Consignor.) If charges are to be prepaid, write or stamp here "To Be Prepaid." .31,900 79,020 Received \$ to apply in prepayment of the charges on the property described hereon. Agent or Cashier (The signature here acknowledges only the amount prepaid.) Charges advanced If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is carrier's or shipper's weight. IOTE—Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property, he agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding **Shippers imprint in lieu of stamps not part of bill of lading approved by Inter-state Commerce Commission. NTERNATIONAL PAPER COMPANY, Shipper CONTAINERBOARD MFG. Agent, Per 🗷

armanent post-office address of shipper,

Manhattanville Road, Purchase, New York 10577

#### TANK WASH WORK ORDER

Tank Cleaning Division
Griggs Rd. • Houston, TX 77021
none: (713) 676-1460 • Fax: (713) 676-1676

Th

inte

This for r

ractor Address:				Time:
railer / Container Number Dropped By	<i>/</i> :			Need By:
1165				
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	ISO CONT	AINER	DRY BULK
TANKTRAILER ROLL TAR	P BOX	FRAC TANK	POLY TANK	VACUU
Compartment # L	ast Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Ro
N.o Diset				,r·
2				
}	40			
	·			· · · · · · · · · · · · · · · · · · ·
				·
CLEANING CODES	WORK PERFORMED		TANK ENTRY P	ERMIT
1 Air Dry	WOINT EN CHINE	Oxygen (19.5% -23.5		#3 #4
2 Quick Rinse		LEL (<10%)	#1  #2 #2 #2	
3 Cold Water Rinse	····	CO ² (<35 ppm)	#1 0 #2	#3 +4
4 Hot Water Rinse		Toxic Vapor	#1 0 #2	
5 Steam Only (Per Hour)		Signature:	se	
6 Steam & Dry	1	Stripper Usage:		
7 Rinse, Steam & Dry		-		
8 Detergent Wash, Rinse & Dry		Comments:	<u>.</u>	
9 Caustic Wash & Dry		-		•
10 Caustic Wash, Rinse & Dry		7		
11 Waste Water Surcharge	/	7		•
12 Solvent Wash (Diesel # Hours)	·			
13 Solvent Wash (Stripper)				
14 Exterior Tractor Wash				
15 Exterior Trailer Wash (w/o Internal)		7		
16 Exterior Trailer Wash (with Internal)				
17 Exterior Acid Brite Wash		Authorized Addit	ional Services:	
18 Hand Labor (# Men / # Hours)			unicozilari	gent gentle still med stør sprengerhen kjedt på Fredrik store år sed en det still at hav hav hav her her her h
19 Hydroblaster (# Hours)	The second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon			
20 Solvent Wash (Green Stripper)		******		
21 Passivation				
Hose Cleaning			and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s	والمنافقة والمنافقة والمنافق والمنافقة والمنافقة والمنافقة والمنافقة والمنافقة والمنافقة والمنافقة والمنافقة
Pump Cleaning		CES Environmental Serv	ices, Inc., Cleaning Division, no washing procedure or the total	nakes no guarantees with re
Cleaned By: 5E	Date 11-18-9	moisture. Final inspection of release CES Environmental from any allegations that	t washing procedure of the total the equipment remains the res Services, Inc., Cleaning Division the equipment was impropert ervices, Inc., Cleaning Division or losses of equipment and/or t	ponsibility of the customer, on, from any responsibility by y cleaned, resulting in dam
Inspected By:	Date		ART WARE	

TANK WASH WORK ORDER

nvironmental Services

ner / Tank Cleaning Division

→ Griggs Rd. • Houston, TX 77021

none: (713) 676-1460 • Fax: (713) 676-1676

PO # Custome	Pr: 0 —		Date:
88892	Des I PR		4-13-09
Tractor Address			Time:
2380	I JORADO AL		Q:30
Trailer / Container Number Dropped		-	Need By:
_ 1 '''	oy.		Need by.
1195	- Court		3 - 24 - 24 - 44
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX		DRY BULK  VACUUM TRUCK
TANK TRAILER ROLL T	والمساق والمساق والمساق والمساق والمساق والمساق والمساق والمساق والمساق والمساق والمساق والمساق والمساق والمساق	FRAC TANK POLY TAN	
Compartment #	Last Contained	Heel - Hazardous Heel - Non-Haz	Drum / Rolloff
D B.99.9 For B	OFUEL ANIMAL FAT )		
2			
3			
4			
5			
CLEANING CODES	WORK PERFORMED	TANK ENTRY	PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #2/. C#2	#3 #4 #5
2 Quick Rinse		LEL (<10%) #1 0 #2	#3 #4 #5
3 Cold Water Rinse		CO ² (<35 ppm) #1	#3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 #2	#3#4#5
5 Steam Only (Per Hour)		Signature: 15	
6 Steam & Dry		Stripper Usage:	
7 Rinse, Steam & Dry	1 2 2 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	·	
8 Detergent Wash, Rinse & Dry		Comments:	
9 Caustic Wash & Dry		7	
10 Caustic Wash, Rinse & Dry	1	1	
11 Waste Water Surcharge		1	
12 Solvent Wash (Diesel # Hours)		7	
13 Solvent Wash (Stripper)		- · ·	a. m. a
14 Exterior Tractor Wash	<del></del>	1	
15 Exterior Trailer Wash (w/o Internal	)	1	
16 Exterior Trailer Wash (with Internal	<del></del>	1 .	
17 Exterior Acid Brite Wash	1	Authorized Additional Services:	
18 Hand Labor (# Men / # Hours)	<del></del>	1	
19 Hydroblaster (# Hours)			
20 Solvent Wash (Green Stripper)			
21 Passivation			
Hose Cleaning /- 3//			
Pump Cleaning		CES Environmental Services, Inc., Cleaning Divisi	on, makes no guarantees with respect to the
		CES Environmental Services, Inc., Cleaning Divisi thoroughness of the tank washing procedure or the moisture. Final inspection of the equipment remains the release CES Environmental Services, Inc., Cleaning E from any allegations that the equipment was improved.	e total elimination of interior residues and/or e responsibility of the customer, and they hereby
	Date 4.13-9	from any allegations that the equipment was impre-	operly cleaned, resulting in damage or loss.
Cleaned By:	Date	CES Environmental Services, Inc., Cleaning Didamages or losses of equipment an	vision, is in no manner responsible for any d/or materials left in their yard.
Inspected By:	Date		
mopeoted by.	vale	Print Name:	Date
		Signature:	

#### Vironmental Services

Tank Cleaning Division
Figgs Rd. • Houston, TX 77021
Fig. (713) 676-1460 • Fax: (713) 676-1676

. (, t - )		1.4				
PO#	Customer:	3	4	/		Date: 4 /13 /09
Tractor	Address:					Time:
DIST.						10'40 AM
Trailer / Container Number	Dropped By:		·· · · · · · · · · · · · · · · · · · ·			Need By:
2285	1					1ASAP
CONTAINER TYPE:	TOTE BIN	ROLL DOOR BO	OX	ISO CONT	AINER	DRY BULK
TANK TRAILER	· /			FRAC TANK	POLY TA	
Compartment #		st Contained		Heel - Hazardous	is the long of an energy of the could	
1 2.8						
2						
3 Andrews						
4						
5						
CLEANING CODES		WORK PERFORME	D		TANK ENTRY	PERMIT
1 Air Dry				Oxygen (19.5% -23.5%	6) #D 0 89 #2	#3#4#5
2 Quick Rinse				LEL (<10%)	#1_0#2	
3 Cold Water Rinse				CO ² (<35 ppm)		#3#5
4 Hot Water Rinse	i i			Toxic Vapor		#3 #4 #5
5 Steam Only (Per Hour)				Signature;4_1		
6 Steam & Dry				Stripper Usage:		
7 Rinse, Steam & Dry						en en en en en en en en en en en en en e
8 Detergent Wash, Rinse	& Dry			Comments:		
9 Caustic Wash & Dry				1	TEX DING	
10 Caustic Wash, Rinse &	Dry				, wal	
11 Waste Water Surcharg	e /			] 1 W'''		
12 Solvent Wash (Diesel #	# Hours)			] (	Ť (, , , , )	<b>)</b>
13 Solvent Wash (Stripper	r)				(A)	'w W
14 Exterior Tractor Wash					A	seel cast
15 Exterior Trailer Wash (v	w/o Internal)			]		on I'll hast
16 Exterior Trailer Wash (v	with Internal)				· .	4
17 Exterior Acid Brite Was	sh			Authorized Additi	onal Services:	
18 Hand Labor (# Men / #	Hours)					
19 Hydroblaster (# Hours)		***				
20 Solvent Wash (Green S	Stripper)					
21 Passivation			4.7.0			
Hose Cleaning (	3)	· · · · · · · · · · · · · · · · · · ·				
Pump Cleaning			No. 40 (1. 16)	thoroughness of the tank	washing procedure or the	n, makes no guarantees with respect to the total elimination of interior residues and/or
Cleaned By:	R	Date: 1-13-0	7	release CES Environmental S from any allegations that CES Environmental Se	ervices, Inc., Cleaning Divi the equipment was improproces, Inc., Cleaning Division	responsibility of the customer, and they hereby vision, from any responsibility for claims arising perty cleaned, resulting in damage or loss. sion, is in no manner responsible for any for materials left in their yard.
Inspected By:		Date		Print Name:	ANK DOW'S	Date 4/13/09
				Signature:	roof We	man provider .
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### **Ironmental Services**

### TANK WASH WORK ORDER

Tank Cleaning Division

19gs Rd. • Houston, TX 77021

10: (713) 676-1460 • Fax: (713) 676-1676

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PO# C	ustomer	E'S			Date: 1/4/	1/09
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CLEANING CODES		WORK PERFORMED		TANK ENTRY	PERMIT	
1 Air Dry			Oxygen (19.5% -23.5	%) #1 Joy #2	#3 #4	#5
2 Quick Rinse			LEL (<10%)	#1 / #2	#3 #4	#5
3 Cold Water Rinse			CO ² (<35 ppm)	#1 #2	#3 #4	#5
4 Hot Water Rinse			Toxic Vapor	#1 <u>/</u> #2	#3 #4	#5
5 Steam Only (Per Hour)			Signature:			
6 Steam & Dry			Stripper Usage:			
7 Rinse, Steam & Dry						
8 Detergent Wash, Rinse & D	ry		Comments:			
9 Caustic Wash & Dry	·			•		
10 Caustic Wash, Rinse & Dry	/					
11 Waste Water Surcharge						
12 Solvent Wash (Diesel # Ho	urs)					
13 Solvent Wash (Stripper)						
14 Exterior Tractor Wash						
15 Exterior Trailer Wash (w/o		·				••.
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17 Exterior Acid Brite Wash			Authorized Addit	ionai Services:		
18 Hand Labor (# Men / # Ho	urs)	,				
19 Hydroblaster (# Hours)						
<ul><li>20 Solvent Wash (Green Strip</li><li>21 Passivation</li></ul>	per)	/				
Hose Cleaning	10				<del></del>	· · · · · · · · · · · · · · · · · · ·
Pump Cleaning	<del>)                                    </del>		CES Environmental Serv	ices, Inc., Cleaning Division,	, makes no quarantees w	ith respect to the
1 Grap Oleaning	D		thoroughness of the tank moisture. Final inspection of t release CES Environmental	washing procedure or the to	otal elimination of interior esponsibility of the custor sion, from any responsibi	residues and/or mer, and they hereby lity for claims arisind
Cleaned By:	J.K.	Date/_/_09	CES Environmental Se	ervices, Inc., Cleaning Division losses of equipment and/o	on, is in no manner resp	onsible for any
Inspected By:	<u>.</u>	Date	Print Name:		Date	
			Signature:			Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Selected Sel

#### GHT BILL OF LADING—SHORT FORM—Original—Not Negotiable SHIPPER'S No.19692 CARRIER'S NO. 17/323 INTERNATIONAL PAPER COMPANY AT Mansfield, La., From CONTAINERBOARD MFG. - MANSFIELD MILL the property described below, in apparent good order, except as noted (contents and carrier being understood throughout this contract as meaning any person or corpora route, otherwise to deliver to another carrier on the route to said destination. It is mutue at any time interested in all or any of said property, that every service to be performed in Southern, Western and Illinois Freight Classifications in effect on the date hereof; if the Shipment hereby certifies that he is familiar with a list and the said of the content of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of ntents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word sign of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its oeach carrier of all or any of said property over all or any portion of said route to destination, and as to each party be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, all-water shipment, or (2) in the applicable motor carrier classification or tariff it this is a motor carrier shipment, of Iading, Including those on the back thereof, set forth in the classification or tariff which governs the other shipment and accepted for himself and his assigns. (Mail or Street address of Consignee-For purposes of notification Only.) Consigned to Destination County 862.2900 Delivery Address★ Route _ Car or Vehicle Initials 29 **Delivering Carrier** KIND OF PACKAGE, DESCRIPTION OF ARTICLES. SPECIAL MARKS, AND EXCEPTIONS *WEIGHT (SUBJ. TO CORR.) Subject to Section 7 of conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor the consignor shall sign the following statement: CLASS OF RATE CHECK NO PACKAGES Fank# 307 rude tall oil 34,080 79,200 The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges. (Signature of Consignor.) If charges are to be prepaid, write or stamp here "To Be Prepaid." Received \$ to apply in prepayment of the charges on the property described hereon. Agent or Cashier Per (The signature here acknowledges only the amount prepaid) Charges advanced *If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is carrier's or shipper's weight NOTE—Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding **Shippers imprint in lieu of stamps not part of bill of lading approved by Inter-state Commerce Commission. INTERNATIONAL PAPER COMPANY, Shipper CONTAINER BOARD MIFG. Agent, Per RuselKay Per

Permanent post-office address of shippe

2 Manhattanville Road, Purchase, New York 10577

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- TOTO 16-1460	•	Fax:	(713	3) 6	76-1	676

PO # Custome	er: /ces	are and a second		Date: 4-15-09
Tractor 650 Address				Time:
Trailer / Container Number Dropped	By: SCOTT GL	ovek		Need By:
CONTAINER TYPE: U TOTE BIN	ROLL DOOR BOX  ARP BOX  VACUUM BOX	ISO CONT	AINER D	DRY BULK  K VACUUM TRUCK
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CLEANING CODES	WORK PERFORMED		TANK ENTRY I	PERMIT
1 Air Dry		Oxygen (19.5% -23.59	6) #2 0 #2	#3 #4 #5
2 Quick Rinse		LEL (<10%)	#1 10 #2	#3#4#5
3 Cold Water Rinse		CO ² (<35 ppm)	#1 <u>/O</u> #2	#3 #4 #5
4 Hot Water Rinse		Toxic Vapor	#1 <u>0</u> #2	#3 #4 #5
5 Steam Only (Per Hour)	The second section of the second section of the second section of the second section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section section s	Signature:	ブレ	
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10 Caustic Wash, Rinse & Dry		1	- 1	
11 Waste Water Surcharge		1		•
12 Solvent Wash (Diesel # Hours)		1		
13 Solvent Wash (Stripper)		1		
14 Exterior Tractor Wash				
15 Exterior Trailer Wash (w/o Interna	)	1		
16 Exterior Trailer Wash (with Interna	1)	1		·
17 Exterior Acid Brite Wash		Authorized Additi	onal Services:	
18 Hand Labor (# Men / # Hours)				
19 Hydroblaster (# Hours)				
20 Solvent Wash (Green Stripper)				
21 Passivation				
Hose Cleaning				
Pump Cleaning  Cleaned By:	4-15-9	thoroughness of the tank moisture. Final inspection of t release CES Environmental S from any allegations that	washing procedure or the to ne equipment remains the re- services, Inc., Cleaning Divis the equipment was imprope	makes no guarantees with respect to the tal elimination of interior residues and/or sponsibility of the customer, and they hereby sion, from any responsibility for claims arising ty cleaned, resulting in damage or loss.
Cleaned By:	Date	CES Environmental Se damages o	rvices, Inc., Cleaning Division rosses of equipment and/or	on, is in no manner responsible for any r materials left in their yard.
Inspected By:	Date	Print Name:		Date
		Signature:		

arbon and retained by	DER must be legibly filled i the Agent.	n, in ink, in indelible Pencil, or in	Shipper's No. 70	157-1	Page 1 OF 1
rom: Georgia-Pacit	fic Chemicals LLC (Shipper	the date of the receipt by the carrier of the proper Consigner) AT CROS	SEII, AR		Date 04/14/09
he property described below has roperty to destination, if on its router all or any portion of said router all or any portion of said router.	been recieved by Carrier in apparent good ate, otherwise to deliver to another carrier to conditions of the Uniform every se conditions of the Uniform Domestic Straigi n the National Motor Freight Classification	order, except as noted below, and is marked, con the route to said destination. Each carrier of, a rvice required hereby in accordance with the applicable of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the said of the	insigned and destined as indicate nd any party at any time intereste licable contract(s), if any, between water shipment, in the Uniform Fre	d below. Carrier agn d in, all or any of sai n Georgia-Pacific an eight Classification, i	ees to carry the d property d Carrier, and and (2)
o: 1324-02 FLUID I	MANAGEMENT		(Consignee)	If charges are pre "Prepaid."	epaid, write or stamp here, PREPD & B
HIP TO ADDRESS: 12102 ALMEDA				Received \$	ment of the charges on the
TY, STATE, ZIP: HOUSTON, TX 7	77045 USA			property describe A	d hereon gent or Cashier
OUTE:					re acknowledges only the
ELIVERING CARRIER:	O OOLIDANIV	DESTINATION:		Charges - Advanced \$	
LEE'S TRUCKIN AR INITIALS AND NUMBER:	G COMPANY	SEAL NUMBER(S):		by a carrier by wa	noves between two ports ter, the law requires ng shall state whether nipper's weight"
NO. AND TYPE OF PACKAGES	BASIC DES	CRIPTION AND ASSOCIATED INFO	PRMATION		WEIGHT*
1 TT	** NON-REGULATED	·*	n û	GROSS	7140
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	YMTO-0690	in	8 = "	NET	£940
	x Oscar 6	arcia. Has	9.05 Am	hereunde of Section of lading Georgia- Section 7	nortation provided in is subject to the terms in 7 of the respective bills identified above as if Pacific initialed the provision on the face of if Ladling with respect to iment described below.
SCRIPTION FOR FREIGHT RA			RAIL CAR TRIP LEA	ASED	a-Pacific Chemicals LLC
		SPECIAL INSTRUCTIONS	TO CONSIGNEE	(S	gnature of Consignor)
	009 8AM-5PM	IAX." DELIVER PRODUCT I D!	MAX TEMP OF 150	DEGREES	, F AS CUSTOME
		RLY CLASSIFIED, DESCRIBED, PACKAGED, M REGULATIONS OF THE DEPARTMENT OF TR		RE IN PROPER	
PPROPRIATE PLACAR FFERED/CORRECTLY FFIXED		TATOUED.	//LABEL(S) APPLIED SPECIFIC LABEL, T	AG,OR BAG	3
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133 Peachtree St. N.E. Atlan		CROSSETT, AR 71635	EMERGENCY GU	IDE BOOK LO	CATED IN CAB
133 Peachtree St. N.E. Atlan	nta, Georgia 30303	CROSSETT, AR 71635		IDE BOOK LO	CATED IN CAB

#### nental Services

Jeaning Division
Houston, TX 77021
Fore-1460 • Fax: (713) 676-1676

Custom	1 1 1	T		Date:
	\			Time!
Address				Time:
Trailer / Container Number Dropped	I By:			Need By:
7755	•			
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	☐ ISO CONT	AINER	DRY BULK
TANK TRAILER  ROLL T	ARP BOX	☐ FRAC TANK	POLY TAN	K VACUUM TRUCK
Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 Lune not Lo	X			
2				10 m m m m m m
3				
4				
5				
CLÉANING CODES	WORK PERFORMED	<u> </u>	TANK ENTRY I	PERMIT
1 Air Dry		Oxygen (19.5% -23.59	%) #1 <u>H - 0</u> #2	#3#4#5
2 Quick Rinse		LEL (<10%)	#1 <u> </u>	_ #3 #4 #5
3 Cold Water Rinse	E	CO ² (<35 ppm)	#1 <u> </u>	#3 #4 #5
4 Hot Water Rinse		Toxic Vapor	#1 <u>J</u> #2	_ #3 #4 #5
5 Steam Only (Per Hour)		Signature:	<u>/ L                            </u>	
6 Steam & Dry		Stripper Usage:		
7 Rinse, Steam & Dry				
8 Detergent Wash, Rinse & Dry		Comments:		
9 Caustic Wash & Dry				
10 Caustic Wash, Rinse & Dry		_		
11 Waste Water Surcharge			F	
12 Solvent Wash (Diesel # Hours)		4		
13 Solvent Wash (Stripper)		4		
14 Exterior Tractor Wash		4		
15 Exterior Trailer Wash (w/o Interna	<u> </u>	4		
16 Exterior Trailer Wash (with Interna	"	Authorized Additi	onal Sonicos:	a andre andre a <u>de l'anticologico de la genta de la Carte de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica de la cologica del cologica de la cologica del cologica de la cologica de la cologica de la cologica de la cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica del cologica d</u>
17 Exterior Acid Brite Wash		Additionized Additi	Onal Services.	
<ul><li>18 Hand Labor (# Men / # Hours)</li><li>19 Hydroblaster (# Hours)</li></ul>				
20 Solvent Wash (Green Stripper)				
21 Passivation				· · · · · · · · · · · · · · · · · · ·
Hose Cleaning	13" 4030			
Pump Cleaning	1/ 3 11/	CES Environmental Servi	ces, Inc., Cleaning Division,	makes no guarantees with respect to the
3		thoroughness of the tank moisture. Final inspection of the tank	washing procedure or the to he equipment remains the re	stal elimination of interior residues and/or esponsibility of the customer, and they hereby sion, from any responsibility for claims arising
Cleaned By:	Date 2 - 26 - 9	from any allegations that  CES Environmental Se	the equipment was imprope	rly cleaned, resulting in damage or loss.  on, is in no manner responsible for any
Inspected By:	Date	Print Name:		Date
		Signature:		

#### STRAIGHT BILL OF LADING FOR CHEMICAL EMERGENCY SHORT FORM Spill, Leak, Fire, Exposure or Accident Call CHEMTREC ORIGINAL - NOT NEGOTIABLE 1-800-424-9300 Received, subject to individually determined rates or contracts that have been agree Day or Night upon in writing between the carrier and shipper, if applicable, otherwise to the abrizol Corporation For call originating outside of the U.S: rates, classifications and rules that have been established which govern the MPLEX CHEMICAL 703-527-3887 Washington, DC Collect transportation of this shipment. Route: MARTIN TRANSPORT, INC. Page 1 Of 1 Ship Date: ALLULAH, LA Delivery Date: February 26, 2009 arges are to be: Collect Car/Container #: 7755 end Freight Bill to: Delivery number: 81166203 CHEVRON US C/O TRAX HOLDING Order Number: 918589 Seal Numbers: SJO 888 070200 Customer Reference No.: 2344400 PO Box 521299 MIAMI FL 33152-1299 Booking Number: Steamship Line: USA Vessel: Cut_off_Date: Pier Address: Consigned to: UNIVAR FOR CHEVRON 777 BRISBANE HOUSTON TX 77061 The property described below, in apparent good order, except as noted(contents and conditions of packages unkn carrier(the word carrier being understood throughout this contract as meaning any-person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth(I) in Uniform Freight Classification, in effect on the date hereof, if this is a rail or a rail-water. Or(2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that it is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted itself and its assigns. IT IS DECLARED THAT THE PACKING OF THE CONTAINER/VEHICLE HAS BEEN CARRIED OUT IN ACCORDANCE WITH PARAGRAPH 5.4.2.1 OF THE IMDG CODE

Description of Materials. Special Marks, and Instructions Quantity/ HM Flash Weight(lbs.) Point(°C) Unit COMMODITY CODE 3811.21.0000 Lubricant Additive Composition LUBRIZOL® 2002D, CPS 2502899 ****Totals***** 5,800 42,692 Gallons 5,800 42,692 Gallons INSULATED TANK TRUCK WITH PUMP AND 8 SECTIONS OF 3 IN HOSE REQUIRED AND AVAILABLE PUMP.
CENTER UNLOADER REQUIRED OR T/T WILL BE REFUSED 989CARRIER TO CONTACT KEN SIMS /KATHY SONES@713-641-9439 FOR DELIVERY APPOINTMENT. CARRIER MUST CONTACT KEN SIMS /KATHY SONES PRIOR TO LOADING MATERIAL INTO TRUCK AT LEAST 24 HOURS IN ADVANCE OF DELIVERY. PRODUCT MUST BE LOADED AT RECOMMENDED LOADING TEMPERATURE. CARRIER MUST MAINTAIN APPROXIMATE PRODUCT TEMPERATURE DURING TRANSIT* IN TRANSIT HEAT / INSULATED TRUCK. WITH PERIODIC TEMPERATURE MONITORING AND REPORTING TO PHIL ZIERTEN, CHEVRON COMMERICAL TRANSPORTATION MANAGER@PHONE NO. 502-634-2937. FOR DELIVERY ON 02/26/09

Security Notice: All carriers will be required to have the delivery number or order number noted above and a valid commercial drivers license upon arrival to the Lubrizol facility. Failure to be able to supply both items will result in the carrier service being rejected, until the information is provided.

The correct weight is as shown above subject to verification in accordance with any applicable agreement with carriers or their authorized agents Where the rates on any of the items listed above are (Shippers imprint in lieu of stamp; not a part of Bill Subject to section 7 of conditions of applicable Bill of Lading. If this dependent on value, the agreed or declared value of the of Lading approved by the Interstate Commerce shipment is to be delivered to the consignee without recourse on the property is hereby specifically stated by the shipper to be Commission). The Fibre containers used for this the released value per article or per distribution package shipment, if applicable, conform to the specification that results in the lowest transportation charges unless set forth in the box makers certificate thereon, and other lawful charges. all other requirements of rule 41 of the Uniform otherwise specified. Classification and Rules of the National Motor Freight Signature:

Classification

consignor, the consignor shall sign the following statement. The carrier shall not make delivery of this shipment without payment of freight and

(Signature of Consignor)

I Hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping classified, packaged, marked labelled/placarded, and are in all respects in prope condition for transport according to the applicable Name of Carrier: MARTIN TRANSPORT, INC. (99) international and national governmental regulation.

Shipper: The Lubrizol Corporation (U.S.) Prepared On: February 17 2009 Per:

L. B. rom

Carrier acknowledges receipt of packages and required placards. Carrier certifies emergency response information was made available and/or carrier has the DOT emergency response guidebook or equivalent document in the vehicle. HAZMAT SECURED

PRO Number:

(Signature - Not Initials)

## ank Cleaning Division

TANK WASH WORK ORDER

ank Cleaning Division

_riggs Rd. • Houston, TX 77021

rione: (713) 676-1460 • Fax: (713) 676-1676

PO # Customer	JAM Dist		,	Date: 4/28	109
Tractor Address:	7010 My Kten	A ROL/	Houston	Time:	
Trailer / Container Number Dropped B	LEWIN L. BAC	knar		Need By: 4/29/09	AM
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	ISO CONT	AINER C	DRY BULK	
TANK TRAILER ROLL TA	RP BOX	FRAC TANK	POLY TAN	< D VACUUM 1	RUCK
Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rollo	ff
1 Lube Oil				,	-
2				,	
3					
4			7		
5					
CLEANING CODES	WORK PERFORMED		TANK ENTRY	PERMIT	
1 Air Dry		Oxygen (19.5% -23.5%	%) #101.0 _{#2}	#3#4#	5
2 Quick Rinse		LEL (<10%)	#1	#3#4#	5
3 Cold Water Rinse		CO ² (<35 ppm)	#1 #2	#3#4#	5
4 Hot Water Rinse		Toxic Vapor	#1_0 #2	_ #3 #4 #	5
5 Steam Only (Per Hour)		Signature:	<u> </u>		
6 Steam & Dry		Stripper Usage:			
7 Rinse, Steam & Dry			•		
8 Detergent Wash, Rinse & Dry	7	Comments:			
9 Caustic Wash & Dry				•	
10 Caustic Wash, Rinse & Dry		1			
11 Waste Water Surcharge	//				
12 Solvent Wash (Diesel # Hours)		·			
13 Solvent Wash (Stripper)		]			
14 Exterior Tractor Wash		]			
15 Exterior Trailer Wash (w/o Internal)		}		•	
16 Exterior Trailer Wash (with Internal)					*
17 Exterior Acid Brite Wash		Authorized Additi	onal Services:	3.30 Julius Barris Barris Martin (1997) Service Service Service (1997) Service Service (1997) Service (1997) Service Service (1997) Service (1997) Service Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997) Service (1997	and the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of t
18 Hand Labor (# Men / # Hours)					
19 Hydroblaster (# Hours)					
20 Solvent Wash (Green Stripper)			- Colling Colling		
21 Passivation					
Hose Cleaning					
Pump Cleaning		thoroughness of the tank	washing procedure or the tol	makes no guarantees with respe tal elimination of interior residues	and/or
Cleaned By:	Date 4 28-9	release CES Environmental S from any allegations that	Services, Inc., Cleaning Divising the equipment was improper	sponsibility of the customer, and ion, from any responsibility for clarify cleaned, resulting in damage of the company responsible for	aims arising or loss.
Oldaneu by.	Date 1 1/0 /	damages o	r losses of equipment and/or	n, is in no manner responsible fo materials left in their yard.	- ary
Inspected By:	Date	Print Name:	····	Date	
		Signature:			<del></del> :

#### straight bill of lading Page: 1/1 Print Date: 04/24/2009 22:17:48 ORIGINAL - NOT NEGOTIABLE ExxonMobil Oil Corporation Sold to Cust: 1001113 Carrier Date Ship To Cust. SCAC No. Shipping Origin Trailer/Container No. 04/24/2009 2021478 WILLCALL BULK BEAUMONT B&P PLANT 317 WCB1 Delivery Note Freight Order No. Purchase Order Release F.O.B. Pro No. 831481600 237238923 201842 Source COLLECT IF PREPAID, RENDER FREIGHT BILL IN DUPLICATE TO PERMANENT J.A.M. DISTRIBUTING POST OFFICE ADDRESS OF SHIPPER: 7010 MYKAWA ROAD HOUSTON TX 77033 The carrier named hereon, by signing this bill of lading **Material** Quantity Weight UOM MOU Matl. Description acknowledges receipt from ExxonMobil Oil Corporation Shipped Desc Open the property described hereon, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated hereon, which said carrier (the word carrier being understood throughout this bill of 98JD32 6.502 47,525 NG **Net Gallons** MOBIL DELVAC MX 15W-40.BULK. lading as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said ***PLEASE DO NOT SHIP UPSIII*** destination if on its route, otherwise to deliver to SHIP ENTIRE LOAD ON PALLETS CERTIFICATE OF ANALYSIS REGITOR ALL BULK another carrier on the route to said destination. It is SHIPMENTS. mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every *** THIS SHIPMENT CONTAINS OIL ** service to be performed hereunder shall be subject to ** 1 CARGO TANK all the terms and conditions of the contract. This bill of lading does not in and of itself constitute a contract of carriage. If a prepaid shipment, this bill of lading is subject to the contract in effect between carrier and ExxonMobil's third party logistics provider. If a freight collect shipment, this bill of lading is a receipt of goods only and a carrier shall have no recourse on consignor for payment of freight and other RESIDUE: "LAST CONTAINED" charges for such freight collect shipments. Signature: If bulk truck: The carrier certifies that the cargo tank supplied for this shipment is a proper container for the Date: 04-17-09 transportation of this commodity as described by the The fiber boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Uniform and

Total Pieces
6,502
Total Ship Weight
47,525 LB

EPAHO011000881

FOR HELP IN EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL FREE (800)424-9300 DAY OR NIGHT.

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

RECEIVED ABOVE PRODUCTS AND QUANTITIES

NOTE-Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of property.

National Motor Freight Classifications.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

Per

Shipper, Per

Carrier, Per

Quart sample provided to carrier

COO provided to carrier

CUSTOMER COPY

Mobil Oil Corporation

-24 09

#### **Juental Services**

∡ Cleaning Division ⊌s Rd. • Houston, TX 77021 ☑: (713) 676-1460 • Fax: (713) 676-1676

PO# (	Customer:	JAM			Date:	. 9
Tractor	Address:				Time:	
Trailer / Container Number [	Propped B	y:			Need By:	
CONTAINER TYPE: TO	OTE BIN	ROLL DOOR BOX	X ISO CONT	AINER [	DRY BULK	
TANK TRAILER	ROLL TAP	RP BOX VACUUM B		POLY TAN		UUM TRUCK
Compartment #		_ast Contained	Heel - Hazardous	Heel - Non-Haz		/ Rolloff
1 570 01			and the second second second			
2 15.101	1.0					
3	<i></i>					
4						
5	<del></del>				<del>                                     </del>	
CLEANING CODES		WORK PERFORMED	)	TANK ENTRY	PERMIT	
1 Air Dry				%) #1 2 - 0 #2	المسيكا المسمع المسمع	#5
2 Quick Rinse			LEL (<10%)	/0) #1 <u>_21_0</u> #2 #1 <u></u> #2		#5 #5
3 Cold Water Rinse			CO ² (<35 ppm)	#1_0_#2		#5
4 Hot Water Rinse			Toxic Vapor	#1 3 #2	#3#4	#5
5 Steam Only (Per Hour)			Signature:	7E		
6 Steam & Dry			Stripper Usage:			
7 Rinse, Steam & Dry						
8 Detergent Wash, Rinse & [	Drv		Comments:			
9 Caustic Wash & Dry		<del></del>				
10 Caustic Wash, Rinse & Di	rv					
11 Waste Water Surcharge		<del>/</del>				
12 Solvent Wash (Diesel # H	ours)	<u>.                                    </u>				•
13 Solvent Wash (Stripper)			<del></del>			
14 Exterior Tractor Wash						
15 Exterior Trailer Wash (w/o	Internal)		<del> </del>			
16 Exterior Trailer Wash (with						
17 Exterior Acid Brite Wash			Authorized Addit	ional Services:	A THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE	
18 Hand Labor (# Men / # Ho	ours)			·		
19 Hydroblaster (# Hours)		<del></del>		<u> </u>		
20 Solvent Wash (Green Stri	pper)					
21 Passivation					<del></del>	
Hose Cleaning					<u></u>	
Pump Cleaning			CES Environmental Serv	ices, Inc., Cleaning Division,	makes no guarantees	with respect to the
Cleaned By:		Date 3 - 3 - 9	moisture. Final inspection of t release CES Environmental s from any allegations that CES Environmental Sc	Services, Inc., Cleaning Division the equipment was improper ervices, Inc., Cleaning Division	esponsibility of the cust sion, from any responsi orly cleaned, resulting in on, is in no manner res	omer, and they hereby bility for claims arising damage or loss.
Inspected By:		Date		r losses of equipment and/o		aiu.
			Print Name:		Date	
			Signature:	·		

TANK WASH WORK ORDER

aning Division
Houston, TX 77021

25/8/

6-1460 • Fax: (713)	676-1676				. 0404
Custome	r:			Date:	ر برسیسان <del>این اساسان ب</del> ر
	JAM			4-4	-09
Address:		T T T T		Time:	
1965	MOID my 10 AW	A .		3:	00 A
ailer / Container Number Dropped	By:			Need By:	***
3/3	Authory Son	i de			
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	ISO CONT	AINER [	DRY BULK	
TANK TRAILER POLL TA	RP BOX	FRAC TANK	POLY TAN	< 🔲 VACI	UUM TRUCK
Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum /	Rolloff
1 / whe oil		-3	ramai su		•
2	The second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the section of the sec				
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4				<u> </u>	· · · · · ·
5					
CLEANING CODES	WORK PERFORMED		TANK ENTRY	PERMIT	
1 Air Dry		Oxygen (19.5% -23.5	%) #1 <u>210</u> #2	_ #3 #4	#5
2 Quick Rinse		LEL (<10%)	#1 #2	•	#5
3 Cold Water Rinse	<del> </del>	CO ² (<35 ppm)	-		#5
4 Hot Water Rinse	<del></del>	Toxic Vapor Signature:	#1 <u>0</u> #2	_ #3 #4	#5
5 Steam Only (Per Hour)	<del> </del>				
6 Steam & Dry	<del> </del>	Stripper Usage:		*	
7 Rinse, Steam & Dry	<del>  /</del>	Comments:			
Detergent Wash, Rinse & Dry     Caustic Wash & Dry	<del>                                     </del>	- Comments.			٠.
10 Caustic Wash, Rinse & Dry	<del>  /</del>	-			
11 Waste Water Surcharge	<del>\</del>	1		•	
12 Solvent Wash (Diesel # Hours)	/	1			,
13 Solvent Wash (Stripper)	<u> </u>	1			i *
14 Exterior Tractor Wash		1			to make
15 Exterior Trailer Wash (w/o Internal)		1			
16 Exterior Trailer Wash (with Internal)					
17 Exterior Acid Brite Wash		Authorized Addit	ional Services:		
18 Hand Labor (# Men / # Hours)					
19 Hydroblaster (# Hours)					
20 Solvent Wash (Green Stripper)					
21 Passivation					
Hose Cleaning					
Pump Cleaning		thoroughness of the tank	ices, Inc., Cleaning Division, i washing procedure or the to he equipment remains the re-	makes no guarantees water to the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom consistency of the custom cons	/ith respect to the r residues and/or mer, and they hereby
WASTER	11 11 6	release CES Environmental	Services, Inc., Cleaning Divisi the equipment was improper	ion, from any responsib	pility for claims arising
Cleaned By:	Date	CES Environmental S	ervices, Inc., Cleaning Division rosses of equipment and/or	n, is in no manner resp	onsible for any
lung antard Day	Data	A			
Inspected By:	Date	Print Name: 4	Athony SNA	$\perp$ Date $\frac{4}{2}$	<u>-7-09</u>
		at A	The same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the s		
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ADING-sho	RT FORM	DELIVERY DATE 06-Apr-2009	DELIVERY TIME	BILL OF LAD 100144624	
, this I					
A JAM 31	3	ORDER REF	ERENCE NO. 377871	CUSTOMER'	S REFERENCE NO.
of the classifications and tariffs in effect on the Mobil Oil Corp Synthetics	date of the issue of the Bill o			SHIPPING	
DE USRC) AT BATTLEGROUND R	OAD, DEER PARK, T	X 77536, USA	!	06-Apr-200	)9
CONSIGNED TO	I NOTE: V	Where the rate is dependent	on value, The property de	escribed below, in ac	parent good order, except as intents of packages unknown), indicated below, which said ood throughout this contract as in possession of the property of its usual place of delivery at as to, each carrier of all or any of said route to destination, and din all or any of said property, areunder shall be subject to all form Domestic Straight Bill of the water shipment, or (2) in the water shipment, or (2) in the water shipment, or (2) in the or tariff if this is a motor carrier he is familiar with all the terms gg, including those on the back of tariff which governs the e said terms and conditions are accepted for himself and his truck or into vehicle of buyer, bile and this document will
DISTRIBUTING	the agree agreed of	are required to state specificall ed or declared value of the pro- r declared value of the propert lly stated by the shipper t	perty. The marked, consig y is hereby carrier (the work	ned and destined as I carrier being underst	indicated below, which said ood throughout this contract as
MYKAWA ROAD	exceeding	g :	under the control	erson or corporation act) agrees to carry to the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of the interest of t	in possession of the property o its usual place of delivery at as to pach correct the property
<b>J</b> OUSTON TX 77033-1132			said property ov as to each party	er all or any portion o at any time intereste	f said route to destination, and in all or any of said property.
/ /JSA	PER GROS	<u> </u>	that every service the terms and	e to be performed he conditions of the Unit (1) in Uniterm Freigh	reunder shall be subject to all form Domestic Straight Bill of
	unioo	1145%	date hereof, if applicable motor	his is a rail or rail - carrier classification	water shipment, or (2) in the or tariff if this is a motor carrier
		1104	shipment. Shippe and conditions	or hereby certifies that of the said bill of ladin	he is familiar with all the terms ig, including those on the back
	TARE	30370	transportation of	this shipment; and the	said terms and conditions are accepted for himself and his
			assigns. If delive Bill of Lading pro	ry is made by seller's visions are not applica	truck or into vehicle of buyer, ble and this document will
SL&C LFVC Shprs Load Consig Unload	NET	4474	serve as a delive	ry receipt.	
The description and unjobblished and this bill of logics are consequent.	Subject to year faction by the	Works Walshire and In-	PLACARDS	OFFERED	
The description and weight indicated on this bill of lading are correct, according to agreement. Shippers imprint in lieu of stamp, not part of if the shipment moves between two ports by a carrier by water, the	bill of lading approved by the law requires that the bill of lac	Interstate Commerce Commissions shall state whether it is "ca	sion. rrier's or		
shipper's weight"			CARRIER SI	GNATURE	
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Chemicals, NEC FREIGHT CODE/DESCRIPTION: 2899991 CH	EMICALS NEC		•		
LINE: 1 PRODUCT CODE/DESCRIPTION:		ECTRASYN 4	PK	G DESC: BLK - I	Bulk Liquid
CUSTOMER PRODUCT CODE: SPE	CTRASYN4	ORD. Q	ΓY: 44265	LB Pricing QT	Y: 24884.087L
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NO PKGS: 1 TT PRODUCT VOL: COEFF: WT/VOL STD TEMP		KAGED VOL: . LOAD TEMP:	SHELL CAI WT/VOL LO	P: DAD TEMP:	
COMPT NO: API:		CH NO:			
PO: 201063 PO LINE ITEM:	VEH NO:				
Instructions:		RESIDUE: "L	AST CONTAINEI	<b>)''</b>	
PICK UP INSTRUCTIONS:		21	2	<u>-</u> ,	
VOPAK TERMINAL # USRC	- 1/10	Signature:	11111/1/1		
2759 BATTLEGROUND ROAD	194561	Date: 4/2	1/09	<del>-</del>	
DEER PARK, TX 77536	0 457	20			
BRENDA HAIRSTON # 281-604-6021	12700			26	
BRENDA.HAIRSTON@VOPAK.COM			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
				:	1.24
				4	
	.7	•			
FOR CHEMICAL EMERGENCY CALL CH	HEMTREC @ 1-80	0-424-9300 or 1-70	3-527-3887 DAY 0	R NIGHT	
Carrier certificates that the cargo tank supplied for this shipment is a c	proper container, as required	in part 173, for the transportation	on of the commodity in the bill	of lading or other shipp	ning paper 🕢
This is to certify that the above named materials are properly classified Department of Transportation. Subject to section 7 of conditions of apstatement. The carrier shall not make delivery of this shipment without	d, described, packaged, mark plicable bill of lading, if this sh t payment of freight and all of	ted and labeled, and are in prop nipment is to be delivered to the	per condition for transportation consignee without recourse c	, according to the appl the consignor, the co	icable regulations of the insignor shall sign the following
Statement. The carrier small not make delivery or this shipment without	r payment of fieldit and all of	ner lawler charges.	1/ . c.		4
Permanent Beat Office Address of Shipper	SHI	PPER Per		7 (	a Commen
Permanent Post Office Address of Shipper: If charges are to be prepaid, write or stamp here, "To Be Prepaid."	Forward freight bills J.A.M. DISTRIBUT		CARRIER	manifer /	I un /
COLLECT	7010 MYKAWA RO HOUSTON TX 770	DAD:		SIM	The Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Committee of the Co
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PER	1 00	•	PER		

TANK WASH WORK ORDE

er / Tank Cleaning Division
Griggs Rd. • Houston, TX 77021
ne: (713) 676-1460 • Fax: (713) 676-1676

PO # Custon	ner: J. A:M.		7 - 11	Date: 4.2.09
Tractor Address	SS:			Time: 4:23 p
Trailer / Container Number   Droppe   3 / 3   -	ed By: Jutch Pl	40		Need By:
CONTAINER TYPE: TOTE BI	N ROLL DOOR BOX TARP BOX VACUUM BOX	ISO CONT	AINER C	
Compartment #	Last Contained	Heel - Hazardous		Drum / Rolloff
1 00				
2				
3			*	
1				
5		-		
CLEANING CODES	WORK PERFORMED		TANK ENTRY F	PERMIT
1 Air Dry	VVOTIK FERFORIVIED	Oxygen (19.5% -23.5%		
2 Quick Rinse		Uxygen (19.5% -23.5% LEL (<10%)	%) #1 <del>2 + 2 +2 +2 +2 +2 +2 +2 +2 +2 +2 +2 +2 +</del>	#3#4#5 #3#4#5
3 Cold Water Rinse	<del></del>	CO ² (<35 ppm)	#1 2 #2	#3#4#5
4 Hot Water Rinse		Toxic Vapor	#1 #2	#3 #4 #5
5 Steam Only (Per Hour)		Signature:	JE	
6 Steam & Dry		Stripper Usage:		
7 Rinse, Steam & Dry		1 "		,
8 Detergent Wash, Rinse & Dry		Comments:		
9 Caustic Wash & Dry		1		
10 Caustic Wash, Rinse & Dry		1	•	
11 Waste Water Surcharge	1//	1		
12 Solvent Wash (Diesel # Hours)		1		
13 Solvent Wash (Stripper)		1		
14 Exterior Tractor Wash		]		
15 Exterior Trailer Wash (w/o Intern	al)	1		
16 Exterior Trailer Wash (with Intern	nal)			
17 Exterior Acid Brite Wash		Authorized Additi	onal Services:	
18 Hand Labor (# Men / # Hours)				
19 Hydroblaster (# Hours)			The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s	
20 Solvent Wash (Green Stripper)				
21 Passivation				
Hose Cleaning				
Pump Cleaning		thoroughness of the tank	washing procedure or the tol	makes no guarantees with respect to the all elimination of interior residues and/or
Cleaned By:	Date 4-2-9	moisture. Final inspection of the release CES Environmental Security and any allegations that CES Environmental Security.	ne equipment remains the re- lervices, Inc., Cleaning Divisi the equipment was improper	sponsibility of the customer, and they heret on, from any responsibility for claims arisin ly cleaned, resulting in damage or loss. n, is in no manner responsible for any
Inspected By:	Date	Print Name:	Nije dan di Samuel Blacco (Samuel Makey pilikana) (Kaley Salatan) (Kaley Salatan) (Kaley Salatan) (Kaley Salat	<b>-</b> - 4 -

TANK WASH WORK ORDER

nvironmental Services
her / Tank Cleaning Division
Griggs Rd. Houston, TX 77021
hone: (713) 676-1460 • Fax: (713) 676-1676

PO # Customer:	7 Am			Date:	-09
Tractor Address:				Time:	50 0
Trailer / Centainer Number Drapped Pu	010 my (CAWA			Need By:	30 10
Trailer / Container Number Dropped By	Andrew			ineed by.	
313	N THERMONY				
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	ISO CONT	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	DRY BULK	
☐ TANK TRAILER ☐ ROLL TARE		FRAC TANK	Seaware the Search		CUUM TRUCK
Compartment # L	ast Contained	Heel - Hazardous	Heel - Non-Haz	Drum	/ Rolloff
Thube Dil				<u></u>	
2					
3					
4		. <u> </u>			
5					
CLEANING CODES	WORK PERFORMED		TANK ENTRY		
1 Air Dry		Oxygen (19.5% -23.59	6) #RON42	#3 #4	<u>#5</u>
2 Quick Rinse		LEL (<10%)	#1_ <i></i> #2	#3 #4	#5
3 Cold Water Rinse		CO ² (<35 ppm)	#1#2	#3 #4	#5
4 Hot Water Rinse		Toxic Vapor	> #1 <u>7</u> #2	#3 #4	#5
5 Steam Only (Per Hour)		Signature#			
6 Steam & Dry	<u></u>	Stripper Usage:	. •	•	
7 Rinse, Steam & Dry					
8 Detergent Wash, Rinse & Dry	<del>-</del> ,	Comments:			•
9 / Caustic Wash & Dry	<u>/</u>				
10 Caustic Wash, Rinse & Dry			<b>A</b>		
11 Waste Water Surcharge					
12 Solvent Wash (Diesel # Hours)					
13 Solvent Wash (Stripper)	·	<u>.</u>			
14 Exterior Tractor Wash		<u> </u>			
15 Exterior Trailer Wash (w/o Internal)					
16 Exterior Trailer Wash (with Internal)	**************************************		<u> 1800-ya kanan sa salah pada kanangan basar sajaka</u>	ki verso de s <u>u ji i i i i soog k</u> i ji ke w <u>isas</u> ya ke w	
17 Exterior Acid Brite Wash		Authorized Additi	onal Services:		
18 Hand Labor (# Men / # Hours)					
19 Hydroblaster (# Hours)					
20 Solvent Wash (Green Stripper)					
21 Passivation					
lose Cleaning					
oump Cleaning	en en en en en en en en en en en en en e	thoroughness of the tank	ces, Inc., Cleaning Division, washing procedure or the to	stal elimination of interi	or residues and/or
Cleaned By: A.R.	Date 4-8-99	CES Environmental Se	ne equipment remains the re itervices, Inc., Cleaning Division the equipment was imprope rvices, Inc., Cleaning Division r losses of equipment and/or	sion, from any responsi rly cleaned, resulting in on, is in no manner res	bility for claims arising admage or loss.
nspected By:	Date	Print Name:	whorks	Date*	1809

(The signature here acknowledges only the amount prepaid.)

75 O1 15/MV 1.1 (O 15/10)	06-Apr-2009		
AL NOT NEGOTIABLE			
AME OF CARRIER	ORDER REFER 9188371/873621	ENCE NO. C	USTOMER'S REFERENCE NO.
RECEIVED, subject to the classifications and tariffs in effect on the da	ite of the issue of the Bill of Lading		SHIPPING DATE
ROM ExxonMobil Oil Corp Synthetics	D. DELLIN COME. COME. COM.		06-Apr-2009
PLANT CODE USRA) AT GULF STATES ROA D-B/L NO.   CONSIGNED TO	NOTE: Where the rate is dependent on	nobe I The assessment describe	
D-B/L NO. CONSIGNED TO	shippers are required to state specifically in	n writing noted (contents and o	d below, in apparent good order, except conditions of contents of packages unknow
A.M. DISTRIBUTING	shippers are required to state specifically in the agreed or declared value of the proper agreed or declared value of the property is specifically stated by the shipper to	hereby carrier (the word carrie	conditions of contents of packages unknowned destined as indicated below, which r being understood throughout this contract
010 MYKAWA ROAD	exceeding	under the contract) ag	or corporation in possession of the propress to carry to its usual place of deliver
OUSTON TX 77033-1132		said destination. It is n said property over all	natually agreed as to , each carrier of all or or any portion of said route to destination,
SA	PER	as to each party at an that every service to t	y time interested in all or any of said propose performed hereunder shall be subject to
·	GROSS	the terms and conditi Lading set forth (1) in	ons of the Uniform Domestic Straight B Uniform Freight Classification in effect or
		date hereof, if this is applicable motor carrie	a rail or rail -water shipment, or (2) in r classification or tariff if this is a motor ca
		shipment. Shipper here and conditions of the	r being understood throughout this contract or corporation in possession of the properties to carry to its usual place of deliver attually agreed as to each carrier of all of any portion of said route to destination, time interested in all or any of said prope performed hereunder shall be subject tons of the Uniform Domestic Straight B Uniform Freight Classification in effect or a rail or rail—water shipment, or (2) it classification or tariff if this is a motor can be considered to the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the co
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77313	29660	hereby agreed to by assigns. If delivery is a	inipment, and the said terms and conditions the shipper and accepted for himself and nade by seller's truck or into vehicle of but are not applicable and this document will
SL&C LFVC Shprs Load		Bill of Lading provisions serve as a delivery receip	are not applicable and this document will bt.
Consig Unload	NET		
description and weight indicated on this bill of lading are correct. Sub	high to varification by the Wasser Walakin	PLACARDS OFFE	RED
description and weight indicated on this bill of lating are correct. Sut rding to agreement. Shippers imprint in lieu of stamp, not part of bill the shipment moves between two ports by a carrier by water, the law	of lading approved by the Interstate Commerce Commission.		e e
the snipment moves between two ports by a carrier by water, the law per's weight"	requires that the bill of lading shall state whether it is "carrier's or	CARRIER SIGNAT	TT TRE
DESCRIPTION OF ARTICLE	ES, SPECIAL MARKS AND EXCEPTI	ONS	FREIGHT WEIG (SUB. TO COR
CUSTOMER PRODUCT CODE: SPE MODE: Road PRODUCT WT:	5001474 / SPECTRASYN ULTRA 300 ECTRASYNULTRA300 ORD. QTY PACKAGED WT:	7: 44092 LB PKG WT:	SC: BLK - Bulk Liquid Pricing QTY: 23701.444
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WHEN FREIGHT IS PREPAID SEND SHIPPING NOTICE WITH INVOICE ORIGINAL

PAGE 1 of 1

#### ⊮nvironmental Services

#### TANK WASH WORK ORDER

ier/Taffik Cleaning Division Griggs Rd. • Houston, TX 77021

ne: (713) 676-1460 •	Fax: (713) 676-1	576		e.	2556/		
Ø#	Customer:				Date:		
1	JAN	<b>\</b>			[1/1/1/1		
Tractor	Address:				Time:		
283					12.31		
Trailer / Container Numbe	r Dropped By: \	0/4		<u></u>	Need By: SAN		
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CONTAINER TYPE:	TOTE BIN	ROLL DOOR BOX	☐ ISO CONT	AINER C	DRY BULK		
TANK TRAILER	ROLL TARP BOX	VACUUM BOX	FRAC TANK	POLY TANK	VACUUM TRUCK		
Compartment #	Last	Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff		
1 Lube 0.1	5-40						
2							
3				. •	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
4							
5		-					
CLEANING CODES	V	ORK PERFORMED		TANK ENTRY F	PERMIT		
1 Air Dry			Oxygen (19.5% -23.5%	6) #1 / #2	#3#4#5		
2 Quick Rinse			LEL (<10%)	#1 <u> </u>	#3 #4 #5		
3 Cold Water Rinse			CO ² (<35 ppm)	#1 #2	_ #3 #4 #5		
4 Hot Water Rinse			Toxic Vapor	_# <u>1</u> #2	#3 #4 #5		
5 Steam Only (Per Hour)			Signature:		1		
6 Steam & Dry			Stripper Usage:				
7 Rinse, Steam & Dry							
8 Detergent Wash, Rinse	& Dry		Comments:				
9 Caustic Wash & Dry		· · · · · · · · · · · · · · · · · · ·					
10 Caustic Wash, Rinse &			_		·		
11 Waste Water Surcharg							
12 Solvent Wash (Diesel	<del></del>						
13 Solvent Wash (Strippe	r)						
14 Exterior Tractor Wash							
15 Exterior Trailer Wash (	<del></del>		·				
16 Exterior Trailer Wash (		·					
17 Exterior Acid Brite Was		·	Authorized Additi	onal Services:	one to the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon		
18 Hand Labor (# Men / #							
19 Hydroblaster (# Hours							
20 Solvent Wash (Green	Stripper)						
21 Passivation							
Hose Cleaning			CES Emissemental Service	and Inc. Cleaning Division			
Pump Cleaning	de <u>l'indication de la propriété de la compartition</u> de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartition de la compartitio	ing sa an linguage of the color linguistics of subanggraphing in	thoroughness of the tank	washing procedure or the tot	nakes no guarantees with respect to the all elimination of interior residues and/or ponsibility of the customer, and they hereby		
		111.0	release CES Environmental S from any allegations that	ervices, Inc., Cleaning Division	ponsibility of the customer, and they hereby on, from any responsibility for claims arising y cleaned, resulting in damage or loss.		
Cleaned By:	16	Date	CES Environmental Se		n, is in no manner responsible for any		
Inspected By:		Date	la constitution of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of				
mapecieu by		Date	Print Name:		Date		

#### straight bill of lading **ORIGINAL - NOT NEGOTIABLE**

From ExxonMobil Oil Corporation

Print Date: 03/26/2009 (

Ship To Cust. Date SCAC No. Carrier Shipping Origin Trailer/Container N 03/26/2009 2021478 318 WCB1 WILLCALL BULK BEAUMONT B&P PLANT Delivery Note Order No. Purchase Order Release F.O.B. Freight Pro No. 831170726 COLLECT 236924759 200622 Source ۰. IF PREPAID, RENDER FREIGHT BILL IN DUPLICATE TO PERMANENT J.A.M. DISTRIBUTING POST OFFICE ADDRESS OF SHIPPER: 7010 MYKAWA ROAD HOUSTON TX 77033

Quantity Matl. Description Material Weight UOM UOM Shipped Open Desc 98FF22 6.501 49,447 NG **Net Gallons** MOBILGARD L540.BULK. ***PLEASE LOAD EARLY AM!*** SHIP ENTIRE LOAD ON PALLETS CERTIFICATE OF ANALYSIS RECEIOR ALL BULK SHIPMENTS. 170434 *** THIS SHIPMENT CONTAINS OIL ** to Brange ** 1 CARGO TANK

**EMERGENCIES** 

The carrier named hereon, by signing this bill of acknowledges receipt from ExxonMobil Oil Corpc the property described hereon, in apparent good except as noted (contents and condition of coof packages unknown), marked, consigned, destined as indicated hereon, which said carrie word carrier being understood throughout this lading as meaning any person or corporation possession of the property under the contract) : to carry to its usual place of delivery at destination if on its route, otherwise to deliv another carrier on the route to said destination. mutually agreed, as to each carrier of all or a said property over all or any portion of said rou destination and as to each party at any interested in all or any of said property, that service to be performed hereunder shall be subje all the terms and conditions of the contract.

Sold to Cust: 1001113

This bill of lading does not in and of itself cons a contract of carriage. If a prepaid shipment, th of lading is subject to the contract in effect bet carrier and ExxonMobil's third party logistics pro If a freight collect shipment, this bill of lading receipt of goods only and a carrier shall hav recourse on consignor for payment of freight and charges for such freight collect shipments.

If bulk truck: The carrier certifies that the cargo supplied for this shipment is a proper container for transportation of this commodity as described b shipper.

The fiber boxes used for this shipment conform t specifications set forth in the box maker's certi thereon, and all other requirements of the Uniforn National Motor Freight Classifications.

**Total Pieces** FOR HELP IN INVOLVING SPILL. LEAK. FIRE 6,501 OR EXPOSURE CALL TOLL FREE Total Ship Weight (800)424-9300 DAY OR NIGHT.

49,447

LB

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

RECONVED ABOVE PROPUETS AND QUANTITIES

NOTE-Where the rate is dependent on value, shippers are required to state specifically in writing the agre declared value of property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

Per

Shipper, Per

Carrier,	PeB/	26/09
AM	. "]:	equ /

coa	provided	to	carrier
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Quart sample provided to carrier

**CUSTOMER** 

**™**obil Oil Corporation

## EPAHO011000890

straight bill of lading

ORIGINAL - NOT NEGOTIABLE

ExxonMobil Oil Corporation

Print Date: 03/26/2009 07:43:

Page:

Date 03/26/2009	Ship To 2021478		SCAC WCB	C No.	Carrier WILLCALL B	ULK	Shipping Origi BEAUMONT B&P F			Trail	ler/Container No
Delivery Not <b>831170726</b>	.e	Order No 2369247		Purchase 200622	Order	Release	F.O.B. Source		ight <b>LECT</b>		Pro No.
IF PREPAID, RENDER POST OFFICE ADDRES			TO PERM	IANENT	•			S H I P	J.A.M. DIS 7010 MYK HOUSTON	AWA ROA	D

Material	Quan Shipped	tity   Open	Weight	UOM	UOM Desc	H	Matl. Description
98FF22	6,501		49,447	NG	Net Gallons		MOBILGARD L540,BULK.
	***PLEASE	LOAD EARLY	AM!***				
	SHIP ENTIRE SHIPMENTS.	LOAD ON P	ALLETS.CERTI	ICATE	OF ANALYSIS R	eo e	OR ALL BULK
	170434					1	
	*** THIS SI ** 1 CARG	IPMENT COL	ITAINS OIL **	*	1 1 2 2		Del to B mose  ON 4/4/09
							on 4/4/09

The carrier named hereon, by signing this bill of ladin acknowledges receipt from ExxonMobil Oil Corporatio the property described hereon, in apparent good order except as noted (contents and condition of content of packages unknown), marked, consigned, an destined as indicated hereon, which said carrier (th word carrier being understood throughout this bill o lading as meaning any person or corporation i possession of the property under the contract) agree to carry to its usual place of delivery at said destination if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any o said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the contract.

Sold to Cust: 1001113

This bill of lading does not in and of itself constitute a contract of carriage, If a prepaid shipment, this bil of lading is subject to the contract in effect between carrier and ExxonMobil's third party logistics provider. If a freight collect shipment, this bill of lading is a receipt of goods only and a carrier shall have no recourse on consignor for payment of freight and other charges for such freight collect shipments.

If bulk truck: The carrier certifies that the cargo tank supplied for this shipment is a proper container for the transportation of this commodity as described by the shipper.

The fiber boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Uniform and National Motor Freight Classifications.

**Total Pieces** FOR HELP IN **EMERGENCIES** INVOLVING SPILL, LEAK, FIRE 6,501 OR EXPOSURE CALL TOLL FREE **Total Ship Weight** (800)424-9300 DAY OR NIGHT. 49,447 LB

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

RECEIVED ABOVE PRODUCTS AND QUANTITIES

nt on value, shippers are required to state specifically in writing the agreed or

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

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Shipper, Per

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COQ provided to carrier

**CUSTOMER COPY** 

**bil Oil Corporation** 

Quart sample provided to carrier

## /ironmental Services

## TANK WASH WORK ORDER

Tank Cleaning Division

ariggs Rd. • Houston, TX 77021

ne: (713) 676-1460 • Fax: (713) 676-1676

PO#	Customer:	$\gamma$				Date: / 3 / 6	19
Tractor 27	Address:	<del></del>				Time:	
Trailer / Container Number	Dropped By:	ene Miran	noG			Need By:	
CONTAINER TYPE: T	OTE BIN ROLL TARP B	ROLL DOG OX VACU		ISO CONTA	AINER D	DRY BULK	M TRUCK
Compartment #	Las	t Contained	a fat e e e	Heel - Hazardous	الله المساور بين من المساور بالأورية الموالة والأوراث والأوراث والأوراث والأوراث والأوراث والأوراث والأوراث وا	Drum / Ro	olloff
177/55	egg (ag) a di e en e						
27)							
3 Dig/L							**:
4 615							
5 7.051							
CLEANING CODES		WORK PERFO	RMED		TANK ENTRY	PERMIT	6
1 Air Dry				Oxygen (19.5% -23.5%	6) #2 -0 #2	#3#4	#5
2 Quick Rinse				LEL (<10%)	#1 0 #2	#3 #4	_ #5
3 Cold Water Rinse				CO ² (<35 ppm)	#1 #2	#3 #4	#5
4 Hot Water Rinse				Toxic Vapor	_#12 #2	#3 #4	_ #5
5 Steam Only (Per Hour)				Signature:	<u> </u>		
6 Steam & Dry				Stripper Usage:			
7 Rinse, Steam & Dry				1	$\bigcirc$		
3 Detergent Wash, Rinse &	Dry	/		Comments:	$\overline{}$		;
) Caustic Wash & Dry		<i>,</i>					
0 Caustic Wash, Rinse & D	Ory						
1 Waste Water Surcharge				100	. \		
2 Solvent Wash (Diesel # I	Hours)						
3 Solvent Wash (Stripper)				*			
4 Exterior Tractor Wash							
5 Exterior Trailer Wash (w/	o Internal)			]			
3 Exterior Trailer Wash (with	th Internal)						
' Exterior Acid Brite Wash				Authorized Addition	onal Services:		
Hand Labor (# Men / # H	lours)				-		
Hydroblaster (# Hours)							
Solvent Wash (Green St	ripper)				***************************************		
Passivation					The Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Part of the Pa		
se Cleaning							
mp Cleaning				thoroughness of the tank y	washing procedure or the tol	makes no guarantees with re tal elimination of interior resi	idues and/or
aned By:			9	moisture. Final inspection of the release CES Environmental Sections any allegations that the CES Environmental Sections are sections.	e equipment remains the re ervices, Inc., Cleaning Divisi he equipment was improper	sponsibility of the customer, ion, from any responsibility fity cleaned, resulting in daman, is in no manner responsite.	or claims arising age or loss.
nected By:		Date		Print Name:			
			girta.	Signature:	ere a timer and district	and the second	6



#### RETAIN/PRIOR CARGO SHEET

JQR002 Rev 1 12.28.07

DATE: 3	31/09	DRIVER:_	ReneW		UNIT: 27/
COMPARTMENT NUMBER	PRODUCT RETAINED IN COMPARTMENT	GALLONS RETAINED IN COMPARTMENT	LAST PRODUCT IN THIS COMPARTMENT IF EMPTY	EMPTY COMPARTMENT VERIFICATION	SPECIAL INSTRUCTIONS
1	0		Diesel		
2	0	0	Diesel		
3	0	0	Diesel		
4	0	0	Unleaded Gas		
5	0	0	Diesel		
6					
LAST PRODUCT IN HOSE REEL: TANKWAGON USE ONLY	Dies	e			
LAST PRODUCT IN PUMP:	Diese	e			
TANKWAGON USE ONLY	2100	,			

THIS FORM MUST BE FILLED OUT COMPLETELY AND ATTACHED TO THE RED RETAIN TAG AND THE RACK MANIFEST FOR ALL PRODUCTS RETAINED. THE "EMPTY COMPARTMENT VERIFICATION" BOX MUST BE INITIALED BY THE DRIVER USING THIS PIECE OF EQUIPMENT NEXT. IF A COMPARTMENT SHOWS TO BE EMPTY, THE DRIVER USING THIS PIECE OF EQUIPMENT NEXT, MUST VERIFY THAT ALL COMPARTMENTS ARE EMPTY BY FULLY BUCKET DRAINING THE COMPARTMENT OR SAFELY GETTING ON TOP TO OPEN THE DOME LIDS FOR VERIFICATION. THIS FORM MUST BE TURNED IN WITH THE DRIVERS PAPERWORK TO KEEP ON FILE.

#### 2

**Inmental Services** 

ank Cleaning Division

.ggs Rd. • Houston, TX 77021

e: (713) 676-1460 • Fax: (713) 676-1676

#### TANK WASH WORK ORDER

PO #	Customer:	N					Date:	- 25-	- 5
Tractor	Address:		<del></del>				Time:	<del></del>	
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319	a.		3						and the self-artists of North Angeles and
CONTAINER TYPE: 1	OTE BIN  ROLL TAF		ROLL DO	OR BOX	ISO CONTA	AINER POLY TAN	DRY E		UM TRUCK
Compartment #	المتالية والمستحد والمتأثران والمستحدثان	ast Cor		OOM BOX	Heel - Hazardous		to the Market State of the	Drum / F	200
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2							<del>                                     </del>		
3								·	
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4	<del></del>		<del></del>				<u> </u>		
5 CLEANING CODES		WOR	K PERF	DOMED		TANK ENTRY	DEDMIT	* * * * * * * * * * * * * * * * * * * *	<u>. 1 - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -</u>
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1 Air Dry 2 Quick Rinse				<del></del>		6) # <u>Joo e lo</u> #2		#4	#5 #5
3 Cold Water Rinse					LEL (<10%) CO ² (<35 ppm)	#1 <u>0</u> #2 #1 <u>0</u> #2			#5 #5
4 Hot Water Rinse					Toxic Vapor	#1 <u>#2</u> #2			
5 Steam Only (Per Hour)	7				Signature 1	) "'			"\
6 Steam & Dry					Stripper Usage:				
7 Rinse, Steam & Dry		/	<del></del>		Carppor Coago.				
8 Detergent Wash, Rinse &	Dry /			· · · · · · · · · · · · · · · · · · ·	Comments:			a, a fra e water to a ga	the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s
9 Caustic Wash & Dry	COIY D	<del></del>		· <del></del>	1				
10 Caustic Wash, Rinse &	Dry /	<del>/</del>			<del>[</del>				
11 Waste Water Surcharge				<del></del>	1				
12 Solvent Wash (Diesel #					•				
13 Solvent Wash (Stripper)									
14 Exterior Tractor Wash	<u> </u>			<del></del>					
15 Exterior Trailer Wash (w.	/o Internal)								
16 Exterior Trailer Wash (w					ł				
17 Exterior Acid Brite Wash					Authorized Additi	onal Services:		<u>. Jana da gua. Jan</u> a	Property and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second
18 Hand Labor (# Men / # h							<del></del>	**************************************	
19 Hydroblaster (# Hours)	10010)								
20 Solvent Wash (Green St	tripper)								To the second
21 Passivation	· · · · · · · · · · · · · · · · · · ·							· .	
Hose Cleaning		The many of the second		***************************************	<u> </u>				
Pump Cleaning					CES Environmental Servi	ces, Inc., Cleaning Division,	, makes no gu	uarantees with	n respect to the
Cleaned By:	2	Da	ate3-2	8-09	moisture. Final inspection of the release CES Environmental Sections any allegations that	washing procedure or the to ne equipment remains the ri- services, Inc., Cleaning Divi- the equipment was improper rivices, Inc., Cleaning Divisi	esponsibility o sion, from any erly cleaned, r	of the custome y responsibilit resulting in da	er, and they hereby y for claims arising image or loss.
			1		damages o	r losses of equipment and/o	r materials le	ft in their yard	ļ,
Inspected By:	101 - 11 - 11 - 11 - 11 - 11 - 11 - 11	D	ate	<del></del>	Print Name:		C	)ate	<u> </u>
					Signature:				



#### TANK WASH WORK ORDER

. دleaning Division Ad. • Houston, TX 77021 رماغ) 676-1460 • Fax: (713) 676-1676

~О# Cu	stomer: JAm			Date: 3-20-9
Tractor 268 Add	dress:			Date: 3 - 20 - 9 Time: 9 - 57 A
Trailer / Container Number Dro	opped By:		n marine de la companya de la companya de la companya de la companya de la companya de la companya de la compa	Need By:
CONTAINED TYPE TOTI	E BIN ROLL DOOR BOX	U ISO CONT	AINED T	DRY BULK
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			ويكواك ويكنونك والمراجع والتناوية	
Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 Oil				
2				
3 1/2				
4		1		
5				
CLEANING CODES	WORK PERFORMED		TANK ENTRY	PERMIT
1 Air Dry		Oxygen (19.5% -23.59	16) #8010 PHEO10	1 #32010 1 #AB 00 #5
2 Quick Rinse/		LEL (<10%)		#3 <u>0</u> #4 <u>0</u> #5
3 Cold Water Rinse		CO ² (<35 ppm)		#3 <i>0</i> #4 <i>0</i> #5
4 Hot Water Rinse		Toxic Vapor	#1#2	_ #3 <u>_0</u> #4 <u>_</u> Ø #5
5 Steam Only (Per Hour)		Signature:	<u> </u>	<del></del>
6 Steam & Dry	/	Stripper Usage:		والمترافق والمترافق والمترافق والمترافق والمترافق والمترافق والمترافق والمترافق والمترافق والمترافق والمترافق
7 Rinse, Steam & Dry				
8 Detergent Wash, Rinse & Dry	, 0	Comments:		
9 Caustic Wash & Dry	<del>- /</del>	7		
10 Caustic Wash, Rinse & Dry	7			
11 Waste Water Surcharge	<del>7   </del>		•	
12 Solvent Wash (Diesel # Hou	irs)			
13 Solvent Wash (Stripper)		1		
14 Exterior Tractor Wash				
15 Exterior Trailer Wash (w/o In	iternal)			
16 Exterior Trailer Wash (with Ir	nternal)	1		
17 Exterior Acid Brite Wash		Authorized Additi	onal Services:	
18 Hand Labor (# Men / # Hour	'S)	1	#CD:	
19 Hydroblaster (# Hours)				
20 Solvent Wash (Green Stripp	er)	1		of the second state of the contract of the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s
21 Passivation				
Hose Cleaning		<u> </u>		
Pump Cleaning		CES Environmental Servi	ces, Inc., Cleaning Division,	makes no guarantees with respect to the
Cleaned By:	Date_3-23-09	moisture. Final inspection of the release CES Environmental Section any allegations that CES Environmental Section 2015.	ne equipment remains the re Services, Inc., Cleaning Divis the equipment was imprope	tal elimination of interior residues and/or sponsibility of the customer, and they hereby ion, from any responsibility for claims arising ty cleaned, resulting in damage or loss. on, is in no manner responsible for any materials left in their yard.
Inspected By:	Date	Print Name: ///	Hon Set	14 Date 3-21-09
		Cianatura: 11/1	il Atti	<i>f</i>

# EPAHO011000895

straight bill of lading

ORIGINAL - NOT NEGOTIABLE

Page: 1/1

Print Date: 03/20/2009 12:19:43

From ExxonMobil Oil Corporation | sold to Cust: 1001113

	Ship To 211741		SCAC No. WCB1	}	Carrier <b>WILLCALL B</b>	ULK	Shipping Origi PORT ALLEN LUB	1	Trailer/Container No.
elivery 1 31108462	Note	Order N 2368489	1		rder	Release	F.O.B. Source	Freight COLLECT	Pro No. A213Z4576871
	der freight bill Dress of Shipper:		TO PERMANENT						TRIBUTING AWA ROAD TX 77033-0000
Material	Quant Shipped	ity Open	Weight	MOU	UOM Desc	H Matl. Desci	ciption	acknowledges re	d hereon, by signing this bill of lading ceipt from ExxonMobil Oil Corporation cribed hereon, in apparent good order
981507	2,545		18,545	NG	Net Gallons	MOBIL DTE 24,BULK		except as noted of packages u	(contents and condition of contents inknown), marked, consigned, and
81122	2,022	i	14,918	NG	Net Gallons	MOBIL DTE 25,BULK		word carrier bei	cated hereon, which said carrier (the ng understood throughout this bill o
98BZ55	14,660		14,660	LB	US pound	SPARTAN EP 320,BU	LK.	possession of the	ning any person or corporation in the property under the contract) agrees is usual place of delivery at said in its route, otherwise to deliver to
	***PLEASE	OAD BETWE	EN 9AM AND	11AM*	* *			another carrier of	on the route to said destination. It is
	*** THIS SH ** 1 CARG		ITAINS OIL **					This bill of ladin a Contract of ta of lading is suit carrier and Exco If a traight colle receipt of good recourse on cons	er all or any portion of said route to as to each party at any time as to each party at any time of any officer party at any time of any officer party that ever formed hereunder shall be subject to conditions of the contract.  If does not in and of itself constitutions of the contract, in affect between the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract in a first the contract
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Total Pieces			P IN EI		NCIES above	is to certify that the a named materials are	RECEIVED ABOVE PRODUCTS	National Motor F	reight Classifications.
19,227 V Ship W	eight	OR EXPO	G SPILL, SURE CALL 9300 DAY	TOLL	FREE and trans	rrly classified, described, aged, marked and labeled, are in proper condition for portation according to the able regulations of the rtment of Transportation.	declared value of property.  The agreed or declared	dent on value, shippers are req value of the property ne shipper to be not ex	uired to state specifically in writing the agreed of is hereby ceeding.
	· · · · · · · · · · · · · · · · · · ·		1.5	1	1 1	<del></del>		COQ provided to carri	

## TANK WASH WORK ORDE

eaning Division
• Houston, TX 77021
676-1460 • Fax: (713) 676-1676

			96		مساكن سيون تقرير
Customer	SAM	· !		Date:	, 6.9
actor Address:				Time:	
783	7010 (My Kaw	CA.		K:0	t (c
Trailer / Container Number   Dropped E				Need By:	
319	Roll Cold	4011		3.27.9	5:0
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	☐ ISO CONT	AINED L	DRY BULK	
TANK TRAILER ROLL TAI	Charge Ho	FRAC TANK	POLY TANK		UUM TRI
	Last Contained	Heel - Hazardous		]	Rolloff
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2					
3					
4	* -				
5					
CLEANING CODES	WORK PERFORMED		TANK ENTRY F	PERMIT	
1 Air Dry		Oxygen (19.5% -23.59	%) #1 <i>3/.0</i> #2	#3#4	#5
2 Quick Rinse		LEL (<10%)	#1 2 #2	_ #3 #4	#5
3 Cold Water Rinse		CO ² (<35 ppm)	#1	_ #3 #4	#5
4 Hot Water Rinse		Toxic Vapor	+#1 <u>0</u> #2	#3 #4	#5 <u></u>
5 Steam Only (Per Hour)		Signature:			
6 Steam & Dry		Stripper Usage:		,	
7 Rinse, Steam & Dry		·			
8 Detergent Wash, Rinse & Dry		Comments:			
9 Caustic Wash & Dry					
10 Caustic Wash, Rinse & Dry					
11 Waste Water Surcharge		•			
12 Solvent Wash (Diesel # Hours)					,,
13 Solvent Wash (Stripper)			•		
14 Exterior Tractor Wash					
15 Exterior Trailer Wash (w/o Internal)					
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17 Exterior Acid Brite Wash		Authorized Addit	onal Services:	**************************************	
18 Hand Labor (# Men / # Hours)				104	
19 Hydroblaster (# Hours)					
20 Solvent Wash (Green Stripper)					
21 Passivation					
Hose Cleaning			and delegation, March 1988 and the 1888 and 1888 and 1888 and 1888 and 1888 and 1888 and 1888 and 1888 and 188		
Pump Cleaning		# thoroughness of the tank	ces, Inc., Cleaning Division, washing procedure or the to	tal elimination of interio	or residues a
Cleaned By:	Date 3-20-9	CES Environmental Se	ne equipment remains the re Services, Inc., Cleaning Divisi the equipment was improper ervices, Inc., Cleaning Divisio r losses of equipment and/or	ion, from any responsi ly cleaned, resulting in m, is in no manner res	bility for clair damage or ponsible for a
Inspected By:	Date	Print Name:		Date	
		Signature:	· · · · · · · · · · · · · · · · · · ·		

Tank Cleaning Division
riggs Rd. • Houston, TX 77021
none: (713) 676-1460 • Fax: (713) 676-1676

PO # Custome	O# Customer: JAM			Date: 3.5.09
	UMIN	<del></del>		Time:
Tractor Address:			<u>.                                    </u>	11:441
Trailer / Container Number Dropped	By			Need By:
	H. alm			
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	☐ ISO CONT	AINER [	DRY BULK
TANK TRAILER I ROLL TA	RP BOX	FRAC TANK	POLY TAN	K VACUUM TRUCK
Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 diesel				
2 diesel				
3 Clesel				
4 gasoline	· · · · · · · · · · · · · · · · · · ·	·	<u> </u>	
5				
CLEANING CODES	WORK PERFORMED		TANK ENTRY	PERMIT
1 Air Dry		Oxygen (19.5% -23.59	%) # <del>121.0</del> #2	#3 #4 #5
2 Quick Rinse		LEL (<10%)	#1 <u>0</u> #2	_ #3 #4 #5
3 Cold Water Rinse		CO ² (<35 ppm)	#1 #2	
4 Hot Water Rinse		Toxic Vapor	#1 2 #2	#3 #4 #5
5 Steam Only (Per Hour)		Signature:	JPR	
6 Steam & Dry	War war and the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the sa	Stripper Usage:		
7 Rinse, Steam & Dry	12.5 / 13			
8 Detergent Wash, Rinse & Dry		Comments:		
9 Caustic Wash & Dry		]		
10 Caustic Wash, Rinse & Dry		] Sta	INS ON EX	TERIOR
11 Waste Water Surcharge				
12 Solvent Wash (Diesel # Hours)		J Pen	IZ TO TAI	NCWASH
13 Solvent Wash (Stripper)				
14 Exterior Tractor Wash		150		
15 Exterior Trailer Wash (w/o Internal)				
16 Exterior Trailer Wash (with Internal)				·
17 Exterior Acid Brite Wash		Authorized Additi	onal Services:	
18 Hand Labor (# Men / # Hours)		·		
19 Hydroblaster (# Hours)				
20 Solvent Wash (Green Stripper)				
21 Passivation				
Hose Cleaning			•	
Pump Cleaning	Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Contro	CES Environmental Servi thoroughness of the tank	ces, Inc., Cleaning Division, washing procedure or the to	makes no guarantees with respect to the tal elimination of interior residues and/or
Cleaned By:	Date 3-5-9	moisture. Final inspection of the release CES Environmental Section of the rel	he equipment remains the re Services, Inc., Cleaning Divis the equipment was imprope ervices, Inc., Cleaning Division	esponsibility of the customer, and they hereby sion, from any responsibility for claims arising fly cleaned, resulting in damage or loss.  on, is in no manner responsible for any
		damages o	r losses of equipment and/o	materials left in their yard.
Inspected By:	Date	Print Name:	·	_ Date
		Signature:		

eaning Division Houston, TX 77021 24248 6-1460 • Fax: (713) 676-1676 Customer: Date: Address: iler / Container Number Dropped By: Need By: CONTAINER TYPE: TOTE BIN ROLL DOOR BOX ISO CONTAINER DRY BULK ROLL TARP BOX ☐ VACUUM BOX FRAC TANK POLY TANK ☐ VACUUM TRUCK ☐ TANK TRAILER **Last Contained** Heel - Hazardous Heel - Non-Haz Compartment # Drum / Rolloff 3 5 **CLEANING CODES WORK PERFORMED** TANK ENTRY PERMIT 1 Air Dry Oxygen (19.5% -23.5%) #171 - U #2 #3 #4 #5 2 Quick Rinse LEL (<10%) 3 Cold Water Rinse CO² (<35 ppm) Toxic Vapor 4 Hot Water Rinse Signature: 5 Steam Only (Per Hour) Stripper Usage: 6 Steam & Dry 7 Rinse, Steam & Dry Comments: 8 Detergent Wash, Rinse & Dry 9 Caustic Wash & Dry 10 Caustic Wash, Rinse & Dry 11 Waste Water Surcharge 12 Solvent Wash (Diesel # Hours) 13 Solvent Wash (Stripper) 14 Exterior Tractor Wash 15 Exterior Trailer Wash (w/o Internal) 16 Exterior Trailer Wash (with Internal) **Authorized Additional Services:** 17 Exterior Acid Brite Wash 18 Hand Labor (# Men / # Hours) 19 Hydroblaster (# Hours) 20 Solvent Wash (Green Stripper) 21 Passivation Hose Cleaning CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or noisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss. **Pump Cleaning** CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard. Cleaned By: Date nspected By: Print Name: Date Signature:___

ental Services

## straignt bill of lading

ORIGINAL - NOT NEGOTIABLE

## From ExxonMobil Oil Corporation Sold to Cust: 1001113

Quart sample provided to carrier

**CARRIER COPY** 

Date 03/10/2009 2021478 WCL1 FOR "WILL CALL" CUST BEAUMONT B&P PLANT 317  Delivery Note 831001307 236723738 199859 Release F.O.B. Source COLLECT  FPREMAD. RENGER FREIGHT BILL IN DUPLICATE TO PERMANENT POST OFFICE ADDRESS OF SHIPPER:  Material Quantity Shipped Open Posc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No. Desc No.
Delivery Note 831001307    Purchase Order   Release   F.O.B.   Freight   Pro No.
### Source COLLECT    F PREPAID, RENDER FREIGHT BILL IN DUPLICATE TO PERMANENT POST OFFICE ADDRESS OF SHIPPER:    Material   Quantity   Weight   UOM   Desc   Material   Open   Shipped   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open   Open
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SHIPMENTS.  destination if on its route, otherwise to deliver to another carrier on the route to said destination. It is
) allother carrier on the route to said destination. It is
indically agreed, as to each carrier of an or any or
said property over all or any portion of said route to *** THIS SHIPMENT CONTAINS OIL ***  destination and as to each party at any time
** 1 CARGO TANK **  interested in all or any of said property, that every service to be performed hereunder shall be subject to
all the terms and conditions of the contract.
This bill of lading does not in and of itself constitute
a contract of carriage. If a prepaid shipment, this bill
of lading is subject to the contract in effect between carrier and ExxonMobil's third party logistics provider.
If a freight collect shipment, this bill of lading is a receipt of goods only and a carrier shall have no
recourse on consignor for payment of freight and other
charges for such freight collect shipments.
If bulk truck: The carrier certifies that the cargo tank supplied for this shipment is a proper container for the
transportation of this commodity as described by the
shipper.
The fiber boxes used for this shipment conform to the specifications set forth in the box maker's certificate
thereon, and all other requirements of the Uniform and
National Motor Freight Classifications.
Total Pieces FOR HELP IN EMERGENCIES This is to certify that the state and another and another and another and another and another and another another and another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another another ano
6 508 INVOLVING SPILL IFAK FIRF property classified, described,
Total Ship Weight OR EXPOSURE CALL TOLL FREE packaged, marked and labeled, and are in proper condition for declared, value, of property.
48,075 LB (800)424-9300 DAY OR NIGHT. transportation according to the applicable regulations of the The agreed or declared value of the property is hereby
Department of Transportation. Specifically stated by the shipper to be not exceeding Per

EPAHO011000899

**ExxonMobil Oil Corporation** 

## vironmental Services

Griggs Rd. • Houston, TX 77021

676-1460 • Fax: (713) 676-1676

ione: (713) 070-17-0					
PO# Custo	omer:			Date:	
	J.W.W.			3/9/08	
Tractor Address:				Time:	
Trailer / Container Number Dropped By:			Need By:		
314				ASAI	
CONTAINER TYPE: TOTE	BIN ROLL DOOR BOX	☐ ISO CONTA	AINER [	DRY BULK	
	L TARP BOX VACUUM BOX	☐ FRAC TANK	POLY TANI	<u> </u>	
Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff	
-17				er Brance our Coulder	
2					
3					
4					
5					
CLEANING CODES	WORK PERFORMED		TANK ENTRY		
1 Air Dry		Oxygen (19.5% -23.5%	6) #F-0-0 #2	#3#4#5	
2 Quick Rinse		LEL (<10%)	#10 #2	_ #3 #4 #5	
3 Cold Water Rinse		CO ² (<35 ppm)	#1 #2		
4 Hot Water Rinse		Toxic Vapor	#1 <b></b> #2	#3#4#5	
5 Steam Only (Per Hour)		Signature			
6 Steam & Dry		Stripper Usage:			
7 Rinse, Steam & Dry					
8 Detergent Wash, Rinse & Dry		Comments:			
9 Caustic Wash & Dry					
10 Caustic Wash, Rinse & Dry	<del>/</del>	_]			
11 Waste Water Surcharge					
12 Solvent Wash (Diesel # Hours)	)	_			
13 Solvent Wash (Stripper)		_			
14 Exterior Tractor Wash		_{			
15 Exterior Trailer Wash (w/o Inter	<del></del>	4			
16 Exterior Trailer Wash (with Inte	rnal) (	A			
17 Exterior Acid Brite Wash		Authorized Additi	onal Services:		
18 Hand Labor (# Men / # Hours)		<del></del>	<del> </del>		
19 Hydroblaster (# Hours)				· · · · · · · · · · · · · · · · · · ·	
20 Solvent Wash (Green Stripper)	<b>)</b>				
21 Passivation					
Hose Cleaning		OFC Farinamental Cont	on les Classics Division		
Pump Cleaning		thoroughness of the tank moisture. Final inspection of the release CES Environmental S	washing procedure or the to ne equipment remains the re- tervices, Inc., Cleaning Division	makes no guarantees with respect to the all elimination of interior residues and/or combibility of the customer, and they hereby ion, from any responsibility for claims arising by cleaned, resulting in damage or loss.	
Cleaned By:	Date 3-9-07	CES Environmental Se		n, is in no manner responsible for any	
Inspected By:	Date	Print Name:		Date	
		Signature:			

## **Aronmental Services**

TANK WASH WORK ORDER

/Tank Cleaning Division ggs Rd. • Houston, TX 77021 :: (713) 676-1460 • Fax: (713) 676-1676

والمنافي والمنافي والمنافي والمنافي والمنافي والمنافي والمنافي والمنافي والمنافي والمنافي والمنافي والمنافي والمنافي والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية والمنافية				Date:	
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Tractor Address:				Time:	
Trailer / Container Number Dropped By:				Need By	
314 MEIVIN L. BACKMAN			TSHF		
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	☐ ISO CONT		DRY BULK	,
TANK TRAILER - ROLL TAI		FRAC TANK	POLY TAN	T	UCK
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CLEANING CODES	WORK PERFORMED		TANK ENTRY	PERMIT	
1 Air Dry		Oxygen (19.5% -23.5	%) #1 <u>21 a</u> #2	#3#4#5	
2 Quick Rinse		LEL (<10%)	#1 #2	#3#4#5	<del></del> ·
3 Cold Water Rinse		CO ² (<35 ppm)	#1_ <i>O</i> #2	#3 #4 #5	
4 Hot Water Rinse		Toxic Vapor	#1_3_ #2	#3#5	
5 Steam Only (Per Hour)		Signature:	JFF		
6 Steam & Dry	ļ/	Stripper Usage:		ا میں در معادل معادل المراد	
7 Rinse, Steam & Dry					· .
8 Detergent Wash, Rinse & Dry		Comments:			
9 Caustic Wash & Dry	<del>-/</del>	1			
10 Caustic Wash, Rinse & Dry	//	1			
11 Waste Water Surcharge	/	1			
12 Solvent Wash (Diesel # Hours)	/	4			
13 Solvent Wash (Stripper)					
14 Exterior Tractor Wash					
15 Exterior Trailer Wash (w/o Internal)	<u> </u>	1			
16 Exterior Trailer Wash (with Internal)		Authorized Addit	ional Camilagas		-
17 Exterior Acid Brite Wash		Authorized Addit	ional Services: 		
18 Hand Labor (# Men / # Hours)		<b></b>	· · · · · · · · · · · · · · · · · · ·		
19 Hydroblaster (# Hours)		<b></b>			
20 Solvent Wash (Green Stripper)		27 112 112 112 113 11			
21 Passivation					
Hose Cleaning	<u> </u>	CES Environmental Serv	ices Inc. Cleaning Division	makes no guarantees with respect to	the
Pump Cleaning  Cleaned By:	Date 2-259	thoroughness of the tank moisture. Final inspection of t release CES Environmental S from any allegations that CES Environmental Se	washing procedure or the to the equipment remains the re Services, Inc., Cleaning Divis the equipment was imprope	atal elimination of interior residues and sponsibility of the customer, and they ion, from any responsibility for claims rly cleaned, resulting in damage or lo on, is in no manner responsible for an	d/or y hereby s arising ess.
Inspected By:	Date	Print Name:		Date	
		Signature:			

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nmental Services

ik Cleaning Division

Rd. • Houston, TX 77021

3) 676-1460 • Fax: (713) 676-1676

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CLEANING CODES	WORK PERFORMED		TANK ENTRY	PERMIT	; e'
Air Dry		Oxygen (19.5% -23.59		#3 #4	#5
Quick Rinse		LEL (<10%)	#1#2	#3#4	#5
Cold Water Rinse		CO ² (<35 ppm)	#1 / #2	#3#4	#5
Hot Water Rinse		Toxic Vapor	#2	#3#4	#5
Steam Only (Per Hour)		Signature:	5K		
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Exterior Tractor Wash					
Exterior Trailer Wash (w/o Internal)					
Exterior Trailer Wash (with Internal)			·		
Exterior Acid Brite Wash		Authorized Additi	onal Services:		
Hand Labor (# Men / # Hours)					**************************************
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ROM ExxonMobil Oil Corp Synthetics				SHIPPING DATE 19-Feb-2009
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J.A.M. DISTRIBUTING	agreed of de specifically	eclared value of the property is her stated by the shipper to be	reby carrier (the won	d carrier being understood throughout this contract
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HOUSTON TX 77033-1132			as to each party	ver all or any portion of said route to destination. a y at any time interested in all or any of said proper
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he description and weight indicated on this bill of lading are ecceptaing to agreement. Shippers imprint in lieu of stamp, not p	orrect. Subject to verification by the Western very part of bill of lading approved by the Interstate	Weighing and Inspection Bureau Commerce Commission		VA A SUP TENTE
If the shipment moves between two ports by a carrier by water hipper's weight	r, the law requires that the bill of lading snau	state whether it is "carrier s or	CARRIER SI	GNATURE
IM DESCRIPTION OF AR	TICLES, SPECIAL MARI	TO EVCEDEIO		FREIGHT WEIGH
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LINE: 1 PRODUCT CODE/DESCRIPT CUSTOMER PRODUCT COD MODE: Road PRODUCT V NO PKGS: 1 TT PRODUCT V	TION: 5001103 / SPEC DE: SPECTRASYN100 WT: PACKA VOL: PACKA D TEMP:7.121 COR. I BATCE VEH NO:	ORD. QTY: AGED WT: AGED VOL: LOAD TEMP:	44862 PKG WT: SHELL CA	LB Pricing QTY: 24092.510
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LINE: 1 PRODUCT CODE/DESCRIPT CUSTOMER PRODUCT CODE  MODE: Road PRODUCT V NO PKGS: 1 TT PRODUCT V COEFF: WT/VOL STI COMPT NO: API: PO: 199009 PO LINE ITEM:	TION: 5001103 / SPEC DE: SPECTRASYN100  WT: PACKA POL: PACKA D TEMP:7.121 COR. I BATCE VEH NO:  RESIDUE: "L.	ORD. QTY: AGED WT: AGED VOL: LOAD TEMP: H NO:	44862 PKG WT: SHELL CA WT/VOL L	LB Pricing QTY: 24092.510 P:
CUSTOMER PRODUCT CODE  CUSTOMER PRODUCT CODE  MODE: Road PRODUCT V  NO PKGS: 1 TT PRODUCT V  COEFF: WT/VOL STI  COMPT NO: API: PO: 199009 PO LINE ITEM: Instructions:	TION: 5001103 / SPEC DE: SPECTRASYN100  WT: PACKA PACKA OL: PACKA D TEMP: 7.121 COR. I BATCH VEH NO:  RESIDUE: "L.  Signature: M: Date: Z-Z  CALL CHEMTREC @ 1-80  It is a proper container, as required in part 173	ORD. QTY: AGED WT: AGED VOL: LOAD TEMP: H NO:  AST CONTAINED"  CLae   Woman   50  00-424-9300 or 1-703-52  3, for the transportation of the common	7-3887 DAY Odity in the bill of lading.	R NIGHT of other shipping paper
CUSTOMER PRODUCT CODE  CUSTOMER PRODUCT CODE  MODE: Road PRODUCT V  NO PKGS: 1 TT PRODUCT V  COEFF: WT/VOL STI  COMPT NO: API: PO: 199009 PO LINE ITEM: Instructions:	TION: 5001103 / SPEC DE: SPECTRASYN100  WT: PACKA OL: PACKA D TEMP: 7.121 COR. I BATCE  VEH NO:  RESIDUE: "L.  Signature: M: Date: Z-Z  CALL CHEMTREC @ 1-80  It is a proper container, as required in part 173 that silent, described, packaged, marked and lab as of applicable bill of lading, if this shipment without payment of freight and all other tawforest containers without payment of freight and all other tawforest containers.	ORD. QTY: AGED WT: AGED VOL: LOAD TEMP: H NO:  AST CONTAINED''  Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman	7-3887 DAY Of dity in the bill of lading transportation, according hout recourse of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the consta	R NIGHT  or other shipping paper to the applicable regulations of the signor, the consignor shall sign the following
CUSTOMER PRODUCT CODE  MODE: Road PRODUCT V  NO PKGS: 1 TT PRODUCT V  COEFF: WT/VOL STI  COMPT NO: API:  PO: 199009  PO LINE ITEM:  Instructions:  FOR CHEMICAL EMERGENCY (  Carrier certificates that the cargo tank supplied for this shipment this is to certify that the above named materials are properly of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the companion of the c	TION: 5001103 / SPEC DE: SPECTRASYN100  WT: PACKA OL: PACKA D TEMP: 7.121 COR. I BATCH  VEH NO:  RESIDUE: "L  Signature: M: Date: Z-Z  CALL CHEMTREC @ 1-80  It is a proper container, as required in part 173 tassified, described, packaged, marked and lab as of applicable bill of lading, if this shipment without payment of freight and all other tawforms without payment of freight and all other tawforms SHIPF  Forward freight bills to J.A.M. DISTRIBUTE	ORD. QTY: AGED WT: AGED VOL: LOAD TEMP: H NO:  AST CONTAINED''  CLast Womast S  O-424-9300 or 1-703-52  3, for the transportation of the common poled, and are in proper condition for to its to be delivered to the consignee with all charges.  PER PER D: NG	7-3887 DAY Of dity in the bill of lading transportation, according hout recourse of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the consta	R NIGHT  or other shipping paper to the applicable regulations of the signor, the consignor shall sign the following
CUSTOMER PRODUCT CODE  CUSTOMER PRODUCT CODE  MODE: Road PRODUCT A  NO PKGS: 1 TT PRODUCT A  COEFF: WT/VOL STI  COMPT NO: API:  PO: 199009  PO LINE ITEM:  Instructions:  FOR CHEMICAL EMERGENCY C  Carrier certificates that the cargo tank supplied for this shipment  this is to certify that the above named materials are properly of  Department of Transportation. Subject to section 7 of condition  statement: The carrier shall not make delivery of this shipment.	TION: 5001103 / SPEC DE: SPECTRASYN100  WT: PACKA OL: PACKA D TEMP: 7.121 COR. I BATCH VEH NO:  RESIDUE: "L.  Signature: M: Date: Z-Z  CALL CHEMTREC @ 1-80 In is a proper container, as required in part 173 lassified, described, packaged, marked and lab as of applicable bill of lading, if this shipment without payment of freight and all other lawfores  SHIPF Forward freight bills to	ORD. QTY: AGED WT: AGED VOL: LOAD TEMP: H NO:  AST CONTAINED''  Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman   Chase   Woman	7-3887 DAY Of dity in the bill of lading transportation, according hout recourse of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the consta	R NIGHT or other shipping paper to the applicable regulations of the signor, the consignor shall kign the following

(The signature here acknowledges only the amount prepaid.) WHEN FREIGHT IS PREPAID SEND SHIPPING NOTICE WITH INVOICE

PER

onmental Services

Tank Cleaning Division

ariggs Rd. Houston, TX 77021

Tone: (713) 676-1460 Fax: (713) 676-1676

PO # Custome		. In		Date:	_
	<u>JAm</u>	*		2-13	-09
Tractor Address:				Time:	
	7010 My/cAn	<i>i</i>		5:0	
Trailer / Container Number Dropped	By:			Need By:	
3/8	- Anthony Su	~100			
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	☐ JSO CONT	AINER - C	DRY BULK	
TANK TRAILER O ROLL TA	RP BOX VACUUM BOX	FRAC TANK	POLY TAN	VACL	IUM TRUCK
Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum /	Rolloff
1 6160 1					
2					
3					
4			<u></u>		
5				·	
CLEANING CODES	WORK PERFORMED		TANK ENTRY	PERMIT	
1 Air Dry		Oxygen (19.5% -23.5%	%) # <del>1</del> 6 #2	#3 #4	#5
2 Quick Rinse		LEL (<10%)	#1 <u> </u>	_ #3 #4	#5
3 Cold Water Rinse		CO ² (<35 ppm)	#1 #2	#3#4	#5
4 Hot Water Rinse		Toxic Vapor	#1 #2	#3 #4	#5
5 Steam Only (Per Hour)		Signature:	E	<u></u>	
6 Steam & Dry		Stripper Usage:			
7 Rinse, Steam & Dry					
8 Detergent Wash, Rinse & Dry		Comments:			A POST OF THE STATE OF STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF
9 Caustic Wash & Dry		1			
10 Caustic Wash, Rinse & Dry				•	· '.
11 Waste Water Surcharge		7			,
12 Solvent Wash (Diesel # Hours)		1		•	
13 Solvent Wash (Stripper)		1			1"
14 Exterior Tractor Wash					
15 Exterior Trailer Wash (w/o Internal)					
16 Exterior Trailer Wash (with Internal)					,
17 Exterior Acid Brite Wash		Authorized Additi	onal Services:		Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Service Servic
18 Hand Labor (# Men / # Hours)	·				
19 Hydroblaster (# Hours)					
20 Solvent Wash (Green Stripper)					,
21 Passivation					
Hose Cleaning					
Pump Cleaning		thoroughness of the tank	ces, Inc., Cleaning Division, I washing procedure or the to	al elimination of interior	residues and/or
	Date 2-13-9	moisture. Final inspection of the release CES Environmental Sections that	ne equipment remains the re- dervices, Inc., Cleaning Divisi the equipment was improper	sponsibility of the custon on, from any responsibili ly cleaned, resulting in d	ner, and they hereby ity for claims arising amage or loss.
Cleaned By:	Date <u># / J /</u>	CES Environmental Se damages o	rvices, Inc., Cleaning Divisio losses of equipment and/or	n, is in no manner respo materials left in their yar	nsible for any d.
Inspected By:	Date	Print Name:	What	Date 2	-13-09
		3		,	,
		Signature:	Carried and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second and a second a second and a second and a second and a second and a second a	and the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of t	4 <u> </u>

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XX 7/30					

DELIVERY DATE DELIVER	RY TIME	BILL OF LADING
11-Feb-2009		1001415353

NEGOTIABLE					
OF CARRIER		ORDER REFERENCE 9183953/87283906	NO.	CUSTOMER'S RI 198518	EFERENCE NO.
the electifications and tariffs in effect on the da	te of the issue of the Bill of Lading			SHIPPING DA	TE
FROM ExxonMobil Oil Corp Synthetics (PLANT CODE USRA) AT GULF STATES ROA		ISA		11-Feb-2009	
SID-B/L NO.   CONSIGNED TO	NOTE: Where th	rate is dependent on value,	The property desc	ribed below, in apparer	nt good order, except as s of packages unknown),
SHO BAS TANK	shippers are requi	e rate is dependent on value, red to state specifically in writing ared value of the property. The	marked, consigned	and destined as ind	licated below, which said throughout this contract as
J.A.M. DISTRIBUTING	agreed or declared specifically stated	value of the property is hereby by the shipper to be not	meaning any pers	on or corporation in p	ossession of the property usual place of delivery at , each carrier of all or any
7010 MYKAWA ROAD	exceeding		said destination. It	is mutually agreed as to	, each carrier of all or any
HOUSTON TX 77033-1132			as to each party at	t any time interested in	all or any of said property, der shall be subject to all
USA	PER		the terms and co	nditions of the Uniform ) in Uniform Freight Cla	each carrier of all or any department of all or any of said property, der shall be subject to all Domestic Straight Bill of saification in effect on the ar shipment, or (2) in the fift if this is a motor carrier is familiar with all the terms achding those on the back tariff which governs the determs and conditions are epted for himself and his ck or into vehicle of buyer, dethis document will
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· · · · · · · · · · · · · · · · · · ·			shipment. Shipper	hereby certifies that he i	is familiar with all the terms
	TARE		thereof, set forth transportation of the	in the classification of its shipment, and the said	tariff which governs the terms and conditions are
The second second second second second second second second second second second second second second second se	1 mag 1 m 1 m	and the second second	hereby agreed to assigns. If delivery	by the shipper and acc is made by seller's true	epted for himself and his
			Bill of Lading provi	sions are not applicable and eccipt.	d this document will
SL&C LFVC Shprs Load Consig Unload	NET			***************************************	
			PLACARDS O	FFERED	<del></del>
The description and weight indicated on this bill of lading are correct. So according to agreement. Shippers imprint in lieu of stamp, not part of bil * If the shipment moves between two ports by a carrier by water, the law	bject to verification by the Western Weigh Il of lading approved by the Interstate Com	ing and Inspection Bureau merce Commission.			
* If the shipment moves between two ports by a carrier by water, the law shipper's weight"	requires that the bill of lading shall state	whether it is "carrier's or	CARRIER SIG	NI ATTIDE	:
HM DESCRIPTION OF ARTICL				T. T. T.	FREIGHT WEIGHT
FREIGHT CODE/DESCRIPTION: 2991290 LU LINE: 1 PRODUCT CODE/DESCRIPTION:     CUSTOMER PRODUCT CODE: PU MODE: Road PRODUCT WT:     NO PKGS: 1 TT PRODUCT VOL:     COEFF: WT/VOL STD TEN     COMPT NO: API:     PO: 198518     PO LINE ITEM: Instructions:	5001088 / PURESY TRESYN150 PACKAGE PACKAGE	ORD. QTY: D WT: D VOL: D TEMP:	44597 PKG WT: SHELL CAP	DESC: BLK - Bul LB Pricing QTY: : AD TEMP:	lk Liquid 24071.905 L3
	RESIDUE: "LAST CO Signature: Alax Co Date: 02-11-09				
					•

FOR CHEMICAL EMERGENCY CALL CHEMTREC @ 1-800-424-9300 or 1-703-527-3887 DAY OR NIGHT							
Carrier certificates that the cargo tank supplied for this shipment is a proper	Carrier certificates that the cargo tank supplied for this shipment is a proper container, as required in part 173, for the transportation of the commodity in the bill of lading or other shipping paper						
This is to certify that the shove named materials are properly classified. deco	without manifested manifest and labeled and and in man-an analytics for terrors						
		sociation, according to the approapre regulations of the					
statement: The carrier shall not make delivery of this shipment without paym	ent of freight and all other landing charnes	recourse of the consignor, the consignor shall sign the following					
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Permanent Post Office Address of Shipper:	_ ∞/iy ∪ 1 Per	Cindy A Helm					
If charges are to be prepaid, write or stamp	Forward freight bills to:	1 200					
here "To Re Prensid"	J.A.M. DISTRIBUTING	CARRIER					
COLLECT							
I	7010 MYKAWA ROAD						
	HOUSTON TX 77033-1132						
	USA	DED					
in war.		PER Soll M					
<u>PER</u>							
(The signature here acknowledges only the amount prepaid.)							
(The signature fiere acknowledges only the amount prepaid.)		I/A-X-					

# A.M. Distributing Co. Mobil Oil Lubricants

## J.A.M. Loading Request Form

	luled Loading Key # <u>918395</u>	Date: <u>2/11/09</u> 3/1001415353	0800 Traile	BCS er#_318
Produ	ct Description	: 6300 PURESYN 1	<u>50</u>	
	PLEAS	BETTO ADTEROIDUOT AS I	TOLLOWS	
Trailer Compartment #	Fill Capacity	Requested Gallons	Prod Reque	
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Product tra	iler last contained?	WASH AND DRY		
How was tra	ailer cleaned? WA	ASH AND DRY		
Delivery Fro	om?		·	
		roblems with this requ 13) 844-7752 or Alex B		
Load	Requested By: _	A3		·
Load	I Request Verified	By: Aman		

## **_nvironmental Services**

ainer / Tank Cleaning Division
904 Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

DO #			- W. W		Date:
PO#	Customer	TAM			2-9-9
-	<u> </u>	77/1/			
Tractor	Address:	s and other s			Time:
766	/0	9/0 MYKAWA			12-43
Trailer / Container Number	Dropped E	y / 2 / - /			Need By:
3/9	Li	uns offnste			today
CONTAINER TYPE:	TOTE BIN	ROLL DOOR BOX	☐ ISO CONT	AINER [	DRY BULK
TANKTRAILER C	ROLL TAP	RP BOX	☐ FRAC TANK	POLY TAN	K VACUUM TRUCK
Compartment #		Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
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CLEANING CODES		WORK PERFORMED		TANK ENTRY	PERMIT
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2 Quick Rinse			LEL (<10%)	#1 <u>0</u> #2	#3 #4 #5
3 Cold Water Rinse			CO ² (<35 ppm)	#1 0 #2	#3 #4 #5
4 Hot Water Rinse			Toxic Vapor	_#1#2	#3#5
5 Steam Only (Per Hour)			Signature:	51-	
6 Steam & Dry			Stripper Usage:		
7 Rinse, Steam & Dry			<b>-</b>		
8 Detergent Wash, Rinse 8	& Dry		Comments:		
9 Caustic Wash & Dry					
10 Caustic Wash, Rinse &	Dry		<b>-</b>		
11 Waste Water Surcharge					
12 Solvent Wash (Diesel #					
13 Solvent Wash (Stripper)	) · · · · · · ·		1		+ 198
14 Exterior Tractor Wash			7	•	
15 Exterior Trailer Wash (w	/o Internal)	,	1		
16 Exterior Trailer Wash (w	rith Internal)			_	
17 Exterior Acid Brite Wasl			Authorized Addit	ional Services:	<u>anne e proposition in the Company and Arthur announced and announced and an administrative and an a</u>
18 Hand Labor (# Men / #	Hours)			<del>enica</del>	
19 Hydroblaster (# Hours)		;			THE RESERVE OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF
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Cleaned By:		7/9/69	from any allegations that	the equipment was imprope	rly cleaned, resulting in damage or loss.
Cleaned By:		Date 0 / / 00/	CES Environmental Si damages o	ervices, Inc., Cleaning Division in losses of equipment and/or	on, is in no manner responsible for any r materials left in their yard.
Inspected By:		Date			
			Print Name:		Date
			Cianatura		
		*	Signature:		

Environmental Services

ainer / Tank Cleaning Division

J4 Griggs Rd. • Houston, TX 77021

none: (713) 676-1460 • Fax: (713) 676-1676-

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	/ U/		7/4 6001			Need By:	
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2 Quick Rinse				LEL (<10%)	#1 #2	#3#4	#5
3 Cold Water Rinse				CO ² (<35 ppm)	#1 #2	_ #3 #4	#5
4 Hot Water Rinse				Toxic Vapor	#1.7 #2	_ #3 #4	#5
5 Steam Only (Per Hour)				Signature: 🔿	YK		
6 Steam & Dry				Stripper Usage:			
7 Rinse, Steam & Dry							
8 Detergent Wash, Rinse & D	Ory	And the second		Comments:			
9 Caustic Wash & Dry		į		$\mathbf{J}$			
10 Caustic Wash, Rinse & Di	ry						
11 Waste Water Surcharge		//		_			
12 Solvent Wash (Diesel # H	lours)			J			
13 Solvent Wash (Stripper)				<u>.</u>			
14 Exterior Tractor Wash							
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17 Exterior Acid Brite Wash				Authorized Additi	onal Services:		
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nmental Services
nk Cleaning Division
s Rd. • Houston, TX 77021
13) 676-1460 • Fax: (713) 676-1676

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JA	*\		2/11/09
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6 Steam & Dry		Stripper Usage:	
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10 Caustic Wash, Rinse & Dry		4	
11 Waste Water Surcharge	_/_	4	
12 Solvent Wash (Diesel # Hours)			
13 Solvent Wash (Stripper)	· ·	4	
14 Exterior Tractor Wash			
15 Exterior Trailer Wash (w/o Internal)		4	
16 Exterior Trailer Wash (with Internal)	- H.H	Authorized Additional Sen	
17 Exterior Acid Brite Wash		- Authorized Additional Ser	/ices:
18 Hand Labor (# Men / # Hours)		/	
19 Hydroblaster (# Hours)			
20 Solvent Wash (Green Stripper)			
21 Passivation			
Hose Cleaning			
Pump Cleaning		thoroughness of the tank washing proce	ing Division, makes no guarantees with respect to the dure or the total elimination of interior residues and/or emains the responsibility of the customer, and they hereby
Cleaned By:	Date 2 - (1 - 9 *	release CES Environmental Services, Inc., C from any allegations that the equipment CES Environmental Services, Inc., Cle	Cleaning Division, from any responsibility for claims arising was improperly cleaned, resulting in damage or loss.  seaning Division, is in no manner responsible for any prenent and/or materials left in their yard.
Inspected By:	Date	Print Name:	
en en en en en en en en en en en en en e		Signature:	

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A.M. DISTRIBUTING		agreed or declared specifically stated exceeding	by the shipper	to be not	meaning any pounder the contra	ensure or companition of) agrees to carry	in possession of the proto its usual place of delivery
10 MYKAWA ROAD OUSTON TX 77033-1132					said destination.	H is mutually agreed or all or any portion of	as lo, each carrier of all ( of said towic to destination, t in all or way of said one
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WHEN FREIGHT IS PREPAID SEND SHIPPING NOTICE WITH DIVOLOR

## ...aı Services

Griggs Rd. • Houston, TX 77021 Phone: (713) 676-1460 • Fax: (713) 676-1676

PO # Customer	AM.			Date: ) 27 / 09
Tractor Address:	1 4			Time:
\$ 382				
Trailer Container Number Dropped F	145 B			Need By:
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	☐ ISO CONTA	AINER [	DRY BULK
TANK TRAILER ROLL TAI	RP BOX	FRAC TANK	POLY TAN	
Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 Lobe al		2 (10)	100	Page 1
2				
3				
4				7,1
5			-	
CLEANING CODES	WORK PERFORMED		TANK ENTRY F	PERMIT
1 Air Dry		Oxygen (19.5% -23.5%		#3 #4 #5
2 Quick Rinse		LEL (<10%)	#1 0 #2	#3#4#5
3 Cold Water Rinse		CO ² (<35 ppm)	#1 2 #2	#3#4#5
4 Hot Water Rinse		Toxic Vapor	#1_3 #2	#3#4#5
5 Steam Only (Per Hour)		Signature:	Jt	
6 Steam & Dry	100 <b>4</b> .	Stripper Usage:		
7 Rinse, Steam & Dry	·/- · · · · · · · · · · · · · · · · · ·	1		
8 Detergent Wash, Rinse & Dry		Comments:		
9 Caustic Wash & Dry				
10 Caustic Wash, Rinse & Dry				
11 Waste Water Surcharge				
12 Solvent Wash (Diesel # Hours)		1		
13 Solvent Wash (Stripper)		Ì		
14 Exterior Tractor Wash				
15 Exterior Trailer Wash (w/o Internal)		ĺ		· · · · · · · · · · · · · · · · · · ·
16 Exterior Trailer Wash (with Internal)				
17 Exterior Acid Brite Wash		Authorized Addition	onal Services:	
18 Hand Labor (# Men / # Hours)			<del></del>	
19 Hydroblaster (# Hours)				
20 Solvent Wash (Green Stripper)				
21 Passivation	·		· ·	
Hose Cleaning				
Pump Cleaning		CES Environmental Service	es, Inc., Cleaning Division,	nakes no guarantees with respect to the all elimination of interior residues and/or
Cleaned By:	Date	moisture. Final inspection of the release CES Environmental Se from any allegations that the CES Environmental Ser	e equipment remains the res ervices, Inc., Cleaning Divisi the equipment was improper	sponsibility of the customer, and they hereby on, from any responsibility for claims arising ly cleaned, resulting in damage or loss.  n, is in no manner responsible for any
Inspected By:	Date	Print Name:		Date
		Signature:		

## mental Services

## TANK WASH WORK ORDER

nk Cleaning Division SRd. • Houston, TX 77021 676-1460 • Fax: (713) 676-1676

(713) 070			- الليما - الليما المستح <del>مد المستحمد المستحمد المستحمد المستحمد المستحمد المستحمد المستحمد المستحمد المستحمد ا</del>	
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1_5	ANI.			10/23/09
Tractor Address:				Time:
261				112:53
Trailer / Container Number Dropped	By:			Need By:
317	on Ellion			car.
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	☐ ISO CONT	AINER [	DRY BULK
TANKTRAILER D ROLL TA		☐ FRAC TANK	POLY TAN	_
Compartment #	Last Contained	Heel - Hazardous	1	Drum / Rolloff
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2				
3		<u> </u>		
<u>4</u>				
5 CLEANING CODES	WORK DEDCODATE		TANK ENTON	DEDMIT
CLEANING CODES	WORK PERFORMED		TANK ENTRY	
1 Air Dry	<del></del>	Oxygen (19.5% -23.5%		#3#5
2 Quick Rinse	<u> </u>	LEL (<10%)	#1 #2	#3#4#5
3 Cold Water Rinse	<u> </u>	CO ² (<35 ppm)	#1 #2	#3 #4 #5
4 Hot Water Rinse		Toxic Vapor Signature:	#1 <u>'</u> #2	_ #3 #4 #5
5 Steam Only (Per Hour)			<i></i>	
6 Steam & Dry		Stripper Usage:		
7 Rinse, Steam & Dry		-	······································	·
8 Detergent Wash, Rinse & Dry		Comments:		
9 Caustic Wash & Dry		_		
10 Caustic Wash, Rinse & Dry				
11 Waste Water Surcharge		. · · · .		· · · · · · · · · · · · · · · · · · ·
12 Solvent Wash (Diesel # Hours)		_]		
13 Solvent Wash (Stripper)				
14 Exterior Tractor Wash	·			
15 Exterior Trailer Wash (w/o Internal)		_]		
16 Exterior Trailer Wash (with Internal)	)			
17 Exterior Acid Brite Wash		Authorized Additi	onal Services:	
18-Hand Labor (# Men / # Hours)				
19 Hydroblaster (# Hours)				
20 Solvent Wash (Green Stripper)				
21 Passivation		$\mathbf{J}$		
Hose Cleaning				
Pump Cleaning		CES Environmental Servi	ces, Inc., Cleaning Division,	makes no guarantees with respect to the tal elimination of interior residues and/or
		moisture. Final inspection of the release CES Environmental S	ne equipment remains the re services, Inc., Cleaning Divis	sponsibility of the customer, and they hereby ion, from any responsibility for claims arising
Clooped Pur	JL Date 1 24-09	from any allegations that	the equipment was imprope	rly cleaned, resulting in damage or loss.
Cleaned By:	Date	damages o	riosses of equipment and/or	n, is in no manner responsible for any materials left in their yard.
Inspected By:	Date			
		Print Name:		Date

## nental Services

TANK WASH WORK ORDER

leaning Division
Houston, TX 77021
676-1460 Fax: (713) 676-1676

Customer	Evergieen /J	An		Date: 2 - 2	- 9
actor Address:		<i>s</i>		Time:	
railer / Container Number Dropped E	Зу:			Need By:	
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	ISO CONT	MINED	DRY BULK	
TANK TRAILER ROLL TAI	- Marie	FRAC TANK	POLY TAN		M TRUCK
	Last Contained	Heel - Hazardous			
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			<del></del>	,	
CLEANING CODES	WORK PERFORMED		TANK ENTRY	PERMIT	
1 Air Dry		Oxygen (19.5% -23.5%	6) #10-1 : 0#2	#3#4	#5
? Quick Rinse		LEL (<10%)	#1	#3#4	#5
Cold Water Rinse		CO ² (<35 ppm)	#1O#2	#3 #4_**	#5
Hot Water Rinse	v	Toxic Vapor -	<del>-\#12</del> #2	#3 #4	_ #5
Steam Only (Per Hour)		Signature:	JE		<del></del>
Steam & Dry		Stripper Usage:			
Rinse, Steam & Dry		7			
Detergent Wash, Rinse & Dry		Comments:			
Caustic Wash & Dry		7			
Caustic Wash, Rinse & Dry		]			
Waste Water Surcharge					
Solvent Wash (Diesel # Hours)			100		
Solvent Wash (Stripper)	garante <del>- 1 -</del> 1				
Exterior Tractor Wash					
Exterior Trailer Wash (w/o Internal)					
Exterior Trailer Wash (with Internal)	<b>✓</b>				
xterior Acid Brite Wash		Authorized Additi	onal Services:		
and Labor (# Men / # Hours)					
ydroblaster (# Hours)	ere ere				
olvent Wash (Green Stripper)					
ssivation					
leaning					
leaning		thoroughness of the tank moisture. Final inspection of the	washing procedure or the to be equipment remains the re-	makes no guarantees with re otal elimination of interior resi esponsibility of the customer,	dues and/or and they hereb
By: JE	Date <u> </u>	CES Environmental Se	the equipment was improper rvices, Inc., Cleaning Divisi	sion, from any responsibility for orly cleaned, resulting in dama on, is in no manner responsib r materials left in their yard.	ige or loss.
d By:	Date	Print Name:	1 . 15/10 =	7 Date 2	3 9

Ontainer / Tank Cleaning Division 4904 Griggs Rd. • Houston, TX 77021 Phone: (713) 676-1460 • Fax: (713) 676-1676

	I Data.
PO # Customer:	Date:
Tractor Address:	Time:
Tractor Address:	Kawa 6:30tm
Trailer / Container Number   Dropped By:	Need By:
318	a tell
CONTAINER TYPE: TOTE BIN ROLL DOOR B	BOX ISO CONTAINER DRY BULK
CONTAINER TYPE: TOTE BIN ROLL DOOR BETTER TOTE BIN VACUUM	
Compartment # Last Contained	Heel - Hazardous Heel - Non-Haz Drum / Rolloff
1 Lube Oil	
2	
3	
4	
5	
CLEANING CODES WORK PERFORM	TANK ENTRY PERMIT
1 Air Dry	Oxygen (19.5% -23.5%) #100 7 #2 #3 #4 #5
2 Quick Rinse	LEL (<10%) #1 #2 #3 #4 #5
3 Cold Water Rinse	CO ² (<35 ppm) #1 / #2 #3 #4 #5
4 Hot Water Rinse	Toxic Vapor #1 #2 #3 #4 #5
5 Steam Only (Per Hour)	Signature: 312
6 Steam & Dry	Stripper Usage:
7 Rinse, Steam & Dry	
8 Detergent Wash, Rinse & Dry	Comments:
9 Caustic Wash & Dry	
10 Caustic Wash, Rinse & Dry	
11 Waste Water Surcharge	
12 Solvent Wash (Diesel # Hours)	
13 Solvent Wash (Stripper)	
14 Exterior Tractor Wash	
15 Exterior Trailer Wash (w/o Internal)	
16 Exterior Trailer Wash (with Internal)	
17 Exterior Acid Brite Wash	Authorized Additional Services:
18 Hand Labor (# Men / # Hours)	
19 Hydroblaster (# Hours)	
20 Solvent Wash (Green Stripper)	
21 Passivation	
Hose Cleaning	And the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of t
Pump Cleaning	CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the
Cleaned By: 50 Date 2/5	thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.  CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.
Inspected By: Date	Print Name: Date
20337	Signature:

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.⊍n _;rX 77021 ∠ Fax: (713) 676-1676

Custome	r:			Date: / / S
				11/5/10
Address:	~			Time:
Address.				14:55
Taile Ocatain an Number Dropped	Du V			
Trailer / Container Number Dropped	in Home	( /		Need By:
312				
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	_ ISO CONT	_	DRY BULK
TANK TRAILER    ROLL TA	ARP BOX	FRAC TANK	POLY TAN	700
Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 Lubre pol	· · · · · · · · · · · · · · · · · · ·			
2				
3				
4				
5				
CLEANING CODES	WORK PERFORMED		TANK ENTRY	PERMIT
1 Air Dry		Oxygen (19.5% -23.5	%) #12/.0#2	#3 #4 #5
2 Quick Rinse		LEL (<10%)	#1 #2	#3#4#5 #3#4#5
3 Cold Water Rinse		CO ² (<35 ppm)	#1 0 #2	#3 #4 #5
4 Hot Water Rinse		Toxic Vapor	#1_0 #2	#3 #4 #5
5 Steam Only (Per Hour)		Signature:	31	
6 Steam & Dry		Stripper Usage:		
7 Rinse, Steam & Dry				
8 Detergent Wash, Rinse & Dry		Comments:		
9 Caustic Wash & Dry				Marie Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Carlos Car
10 Caustic Wash, Rinse & Dry				
11 Waste Water Surcharge		7		
12 Solvent Wash (Diesel # Hours)				
13 Solvent Wash (Stripper)		1		
14 Exterior Tractor Wash		]		
15 Exterior Trailer Wash (w/o Internal)		1		
16 Exterior Trailer Wash (with Internal)		1		· · · · · · · · · · · · · · · · · · ·
17 Exterior Acid Brite Wash		Authorized Addit	onal Services:	
18 Hand Labor (# Men / # Hours)		1	-	
19 Hydroblaster (# Hours)			**	
20 Solvent Wash (Green Stripper)				
21 Passivation				
Hose Cleaning				
Pump Cleaning		CES Environmental Servi	ces, Inc., Cleaning Division,	makes no guarantees with respect to the
		moisture. Final inspection of the release CES Environmental S	ne equipment remains the re services, Inc., Cleaning Divis	makes no guarantees with respect to the tal elimination of interior residues and/or sponsibility of the customer, and they hereby ton, from any responsibility for claims anising by cleaned, resulting in damage or lose
Cleaned By:	Date 1-5-09	from any allegations that	the equipment was improper	ly cleaned, resulting in damage or loss.  n, is in no manner responsible for any
		damages of	losses of equipment and/or	materials left in their yard.
Inspected By:	Date	Dulma Allerina		
		Print Name:		Date
		Signature:		
		orginature	<del></del>	

Container / Tank Cleaning Division 4904 Griggs Rd. • Houston, TX 77021 Phone: (713) 676-1460 • Fax: (713) 676-1676

## TANK WASH WORK ORDER

PO#	10		- · · · · · · · · · · · · · · · · · · ·			In-t-	
	Customer	- A				Date:	-> 00
Tractor	Addus	JA.	<u>~</u>			2	5-07
283	Address:	701-	40 / 0	/A -		Time:	* ~ ~
Trailer / Container Number		1010	MYCA	7018		2	<u>~05</u>
318	Dropped E	^{3y:}		· N		Need By:	
CONTAINED TYPE		TUATO	rony Som	11/1/			
TANK TOAK ED	TOTE BIN		L DOOR BOX	ISO CONT			K
Compartment #	ROLL TAP		VACUUM BOX	☐ FRAC TANK	POLY TAN		ACUUM TRUCK
1 //		Last Contain		Heel - Hazardous	Heel - Non-Haz	Drui	m / Rolloff
2	Mo	BIL GUMPE	570 UIL				
3	<del> </del>						
4	Lupa	0.1				<u></u>	
5							
CLEANING CODES						· · · · · · · · · · · · · · · · · · ·	
1 Air Dry		WORK P	ERFORMED		TANK ENTRY	PERMIT	
2 Quick Rinse				Oxygen (19.5% -23.5%	%) #1 <u>26 /0</u> (#2	#3 #4	4 #5
3 Cold Water Rinse				LEL (<10%)	#1#2		4 #5
4 Hot Water Rinse				CO ² (<35 ppm)	#1 <u>0</u> #2		4 #5
5 Steam Only (Per Hour)		<u> </u>	<del></del>	Toxic Vapor	, ^{#1} — #2	_ #3 #4	4 #5
6 Steam & Dry				Signature:	260		<u> </u>
7 Rinse, Steam & Dry	<del></del>			Stripper Usage:			
8 Detergent Wash, Rinse		<u> </u>					
9 Caustic Wash & Dry	& Dry			Comments:			
10 Caustic Wash, Rinse &	_	<del></del>					
11 Waste Water Surcharge	Dry	·	—··				
12 Solvent Wash (Diesel #	e /						
13 Solvent Wash (Stripper	Hours)						
14 Exterior Tractor Wash	")		<del></del>	a.	7 t		
15 Exterior Trailer Wash (v			<del></del>	)	/		
16 Exterior Trailer Wash (v	v/o Internal)			, , , , , ,			
17 Exterior Acid Brite Was	vith Internal)	-	<del></del>	14			
18 Hand Labor (# Men / #	sh		·	Authorized Additi	onal Services:		
19 Hydroblaster (# Hours)	Hours)		·				
20 Solvent Wash (Green s							
21 Passivation	Stripper)					*** <u>*</u>	
Hose Cleaning			1				
Pump Cleaning						. In the second second second	Company of the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s
					ces, Inc., Cleaning Division, washing procedure or the to	tal elimination of int	terior residues and/or
Cleaned By:	2. P	Date	7-3-09	release CES Environmental S from any allegations that CES Environmental Se	Services, Inc., Cleaning Division the equipment was improper envices. Inc., Cleaning Division	ion, from any respo rly cleaned, resultin n, is in no manner	onsibility for claims arising ig in damage or loss.
Inspected By:		Date_		A	r losses of equipment and/or	14 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
				Print Name: 1	Many Su	Date_	0 3
	1. TT	エロス	V	Signatura:	mt.7==	AND THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF T	

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Date 02/02/200	Ship To		SCAC No.	1	Carrier WILLCALL F	BULK		Shipping Ori BEAUMONT B&P	_		Traile	er/Container No.
elivery N 30605196	lote	Order No 23632739	- 1		rder	Releas	е	F.O.B. Source	- 1	eight LLECT		Pro No.
	DER FREIGHT BILL DRESS OF SHIPPER:		O PERMANENT						S H I P T O	7010 MYI HOUSTON	STRIBUTING (AWA ROAD I TX 77033	
Material	Quant Shipped	ity Open	Weight	MOM	UOM Desc	H Mai	cl. Descr	ciption	∭ a∈	cknowledges r	eceipt from E	y signing this bill of ladio exxonMobil Oil Corporation, in apparent good order
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							JAST	23.09	a o c c c c c c c c c c c c c c c c c c	contract of c f lading is sul arrier and Exx a freight co eceipt of goo ecourse on con harges for suc bulk truck: 1	carriage. If a bject to the conMobil's this lect shipmen ds only and nsignor for path freight collections.	in and of itself constitute prepaid shipment, this contract in effect between party logistics provided, this bill of lading is a carrier shall have yment of freight and other shipments.  Triffies that the cargo to a proper container for odity as described by the contract of the cargo to a proper container for odity as described by the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo to the cargo
									s	pecifications s hereon, and a National Motor	set forth in 1 Il other requir	s shipment conform to the box maker's certific ements of the Uniform ifications.
Total Pieces 6,527 Total Ship V	li i	OR EXPO	LP IN E G SPILL, SURE CAL 9300 DAY	LEAK L TOL	, FIRE propagation part and and and and and and and and and and	is is to cert ove named operly classifie ckaged, marked d are in proper nsportation acc plicable regular	materials are d, described, and labeled, condition for ording to the	declared value of property	dependent on	value, shippers are	y is hereby	specifically in writing the agreed
50,525	LB				Shipper, Pe	partment of Tra	Carrier,	specifically stated Per	□ coo	provided to constant	arrier	CARRIER C

## √ironmental Services

ar/Tank Cleaning Division ⇒riggs Rd. • Houston, TX 77021 ⇒ne: (713) 676-1460 • Fax: (713) 676-1676

<u></u>					
PO #	Customer:	TOM			Date: /-/5-09
		7 17 17			
Tractor	Address:	7010 Mykau	30		Time: 4:15 PM
Trailer / Container Number					Need By:
317	•••	A. Brown			
CONTAINER TYPE: T	OTE BIN	ROLL DOOR BOX	☐ ISO CONT	AINER [	DRY BULK
X TANK TRAILER	ROLL TAI		FRAC TANK	POLY TAN	K - LYACUUM TRUCK
Compartment #	***************************************	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 Lube Oi	1				10.0
2					
3					
4					
5	-				d .
CEEANING CODES		WORK PERFORMED		TANK ENTRY	PERMIT
1 Air Dry	1-10-1-10-10-10-10-10-10-10-10-10-10-10-		Oxygen (19.5% -23.5	%) #1 <u>7 0 1</u> /#2	#3 #4 #5
2 Quick Rinse			LEL (<10%)	#1#2	
3 Cold Water Rinse			CO ² (<35 ppm)	#1 #2	#3 #4 #5
4 Hot Water Rinse			Toxic Vapor	#1 #2	#3 #4 #5
5 Steam Only (Per Hour)			Signature		
6 Steam & Dry			Stripper Usage:		
7 Rinse, Steam & Dry					
8 Detergent Wash, Rinse &	Dry		Comments:		
9 Caustic Wash & Dry					
10 Caustic Wash, Rinse & D	)ry		Deterge	ent Was	sh & Dry
11 Waste Water Surcharge					
12 Solvent Wash (Diesel # h	lours)				
13 Solvent Wash (Stripper)			4		
14 Exterior Tractor Wash			4		
15 Exterior Trailer Wash (w/o					
16 Exterior Trailer Wash (wit	<del></del>		Authorized Addis	ianal Caminasi	
17 Exterior Acid Brite Wash			Authorized Addit	ional Services:	
18 Hand Labor (# Men / # H	ours)				
19 Hydroblaster (# Hours)	innor)				
20 Solvent Wash (Green Str 21 Passivation	ipper)				
Hose Cleaning					
Pump Cleaning		<u> </u>	CES Environmental Serv	ices, Inc., Cleaning Division,	makes no guarantees with respect to the
- Strip Circumity	<del>alija sadana ili garana.</del> pro		thoroughness of the tank moisture. Final inspection of t	washing procedure or the to the equipment remains the re	stal elimination of interior residues and/or
Olamado T	-	D-1 1 4			sion, from any responsibility for claims arising rly cleaned, resulting in damage or loss.
Cleaned By:	<del></del>	Date / / 6 - 0 7	CES Environmental Se damages o	ervices, Inc., Cleaning Division or losses of equipment and/or	on, is in no manner responsible for any materials left in their yard.
Inspected By:		Date			
			Print Name:		Date
			Signature:		
			J.g. 16.6. J.		

Environmental Services

Container, Tank Cleaning Division
4904 Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

PO# C	ustomer:				Date:			
<b> </b>	DAM	· in the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second			1-20-	29		
Tractor A	ddress:				Time:			
263	2.10							
Trailer / Container Number D	ropped By:	AWARD H			Need By:			
318	Butch				900 pm			
CONTAINER TYPE: TO		ROLL DOOR BOX	☐ ISO CONT	AINER [	DRY BULK			
	ROLL TARP BOX	VACUUM BOX	FRAC TANK	POLY TANK		UM TRUCK		
Compartment #		ontained	Heel - Hazardous		Drum / F	والمناوات والمناوات والمناوات		
1 Mineral Ou			marty	LALVE V				
2								
3								
4								
5								
CLEANING CODES	WC	ORK PERFORMED		TANK ENTRY F	PERMIT			
1 Air Dry			Oxygen (19.5% -23.5)	%) # <u>D</u> 1. D #2	#3 #4	#5		
2 Quick Rinse	ŕ		LEL (<10%)	#1 0 #2		#5		
3 Cold Water Rinse			CO ² (<35 ppm)	#1 🔍 #2		#5		
4 Hot Water Rinse	A		Toxic Vapor	#1 7 #2	#3 #4	#5		
5 Steam Only (Per Hour)	771.44.		Signature:			<del></del> .		
6 Steam & Dry		· · · · · · · · · · · · · · · · · · ·	Stripper Usage:	<del></del>				
7 Rinse, Steam & Dry								
8 Detergent Wash, Rinse & D	ry		Comments:			والهجال والأنهاج والمتحدد أحد		
9 Caustic Wash & Dry		<del> </del>	7	·	. •	w.		
10 Caustic Wash, Rinse & Dry	y /		7					
11 Waste Water Surcharge		<del>"                                    </del>	7					
12 Solvent Wash (Diesel # Ho	ours)	<del></del>	7					
13 Solvent Wash (Stripper)		<del></del>						
14 Exterior Tractor Wash		· · · · · · · · · · · · · · · · · · ·						
15 Exterior Trailer Wash (w/o	Internal)		7			•		
16 Exterior Trailer Wash (with	Internal)		7					
17 Exterior Acid Brite Wash			Authorized Addit	ional Services:				
18 Hand Labor (# Men / # Hou	urs)	<del></del>		·				
19 Hydroblaster (# Hours)		<del></del>				·		
	per)			,				
21 Passivation		<del></del>						
Hose Cleaning								
		<del></del>	CES Environmental Servi	ces, Inc., Cleaning Division, n	nakes no guarantees with	respect to the		
Named annotation to the contract passes annotation of the section of the contract passes (CCC) and Contract Passes			moisture. Final inspection of t release CES Environmental S	he equipment remains the res Services, Inc., Cleaning Division	ponsibility of the custome on, from any responsibilit	er, and they hereby y for claims arising		
Cleaned By:	·	Date 1 - 20 - 9	CES Environmental Se	ervices, Inc., Cleaning Division r losses of equipment and/or	, is in no manner respon	sible for any		
nspected By:		Date	Print Name		Date	And the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s		
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			Signature:					
20 Solvent Wash (Green Strip 21 Passivation Hose Cleaning Pump Cleaning Cleaned By:		Date   - 20 - q	thoroughness of the tank moisture. Final inspection of the release CES Environmental from any allegations that CES Environmental Section of the company of the release of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of t	washing procedure or the tot. he equipment remains the res services, Inc., Cleaning Division the equipment was impropent ervices, Inc., Cleaning Division r losses of equipment and/or a	al elimination of interior reports in the custom on, from any responsibility of leaned, resulting in dain, is in no manner responmaterials left in their yard	esidues and/or er, and they hereby y for claims arising image or loss. sible for any		

riggs Rd. • Houston, TX 77021 he: (713) 676-1460 • Fax: (713) 676-1676

<i>f</i> 0#	Customer:	JA M.			Date:     9   09
Tractor 3	Address:				Time: 1 / 1
Trailer / Container Number D					Need By:
3//	WELV	in Li BACK	w		
CONTAINER TYPE: TO	TE BIN	ROLL DOOR BOX	☐ ISO CONT	AINER [	DRY BULK
TANK TRAILER   TANK TRAILER	ROLL TAR	P BOX 🔲 VACUUM BO	X FRAC TANK	POLY TAN	K VACUUM TRUCK
Compartment #		ast Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 Lobe of	facet i			(Denie)	Western
2					
3					
4		- 1 A			
5					
CLEANING CODES		WORK PERFORMED		TANK ENTRY	PERMIT
1 Air Dry			Oxygen (19.5% -23.5	%) #1/1/ 2 #2	#3 #4 #5
2 Quick Rinse	İ		LEL (<10%)	#1 #2	
3 Cold Water Rinse			CO ² (<35 ppm)	#1 <u> </u>	
4 Hot Water Rinse			Toxic Vapor	#1 <u>0</u> #2	#3 #4 #5
5 Steam Only (Per Hour)		· · · · · · · · · · · · · · · · · · ·	Signature:	5-(	
6 Steam & Dry			Stripper Usage:		
7 Rinse, Steam & Dry					······································
8 Detergent Wash, Rinse & D	Ory		Comments:		
9 Caustic Wash & Dry					
10 Caustic Wash, Rinse & D	ry				*
11 Waste Water Surcharge					
12 Solvent Wash (Diesel # H	lours)				
13 Solvent Wash (Stripper)					
14 Exterior Tractor Wash					
15 Exterior Trailer Wash (w/o	Internal)				
16 Exterior Trailer Wash (with	n Internal)				
17 Exterior Acid Brite Wash			Authorized Addit	ional Services:	
18 Hand Labor (# Men / # Ho	ours)				
19 Hydroblaster (# Hours)					
20 Solvent Wash (Green Stri	pper)			-	
21 Passivation					
Hose Cleaning					
Pump Cleaning			CES Environmental Sen thoroughness of the tan	rices, Inc., Cleaning Division, k washing procedure or the to	makes no guarantees with respect to the otal elimination of interior residues and/or
Cleaned By:	11	Date	rom any allegations that CES Environmental S	t the equipment was imprope	otal elimination of interior residues and/or esponsibility of the customer, and they hereby sion, from any responsibility for claims arising erry cleaned, resulting in damage or loss. on, is in no manner responsible for any r materials left in their yard.
Inspected By:	·	Date	Print Name:		Date
			Signature:		



BILL OF LADING

For help in chemical emergency involving spill, leak, fire or exposure, call CHEMTREC 1-800-424-9300. For calls originating outside the continental United States, call 703-527-3887.

	SALES ORDER NO.	BILL OF LADING/DELIVERY NO.
	106650854	567257724
İ	SHIP DATE 0.0/C	00/0000

Shipment cannot be reconsigned or diverted without permission of the shipper

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THE STATE PARTY PRESENT CHARGES BILL TO  FRO Number:  SECALS 2718, 7223  FRO Number:  SECALS 2718, 7223  FRO Number:  SECALS 2718, 7223  Matter Bill of Lading:  With attached underlying  Bills of Lading:  With attached underlying  Bills of Lading:  With attached underlying  Bills of Lading:  With attached underlying  Bills of Ladings  With attached underlying  Bills of Ladings  Bills of Ladings  With attached underlying  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  Bills of Ladings  B	Address: 22614 N HIGHWAY 28 ANGLETON TX 77515	88 8			Trailer Numbe		2/05_06	)	
THER PARTY PREIGHT CHARGES BILL TO  Season 2018, 7213  Freight Charge Term: (Freight Charge are PREPAID ORDER # 1046977  AG25 GAL of Stull Turbo 332 Del.  CUSTOMSR ORDER NUMBER # of WEIGHT IN LES PALEET DELIVER BY DEST NO FO TYPE NUMBER OTY UNN IM DESCRIPTION OF ARTICLES  OTY UNN IM DESCRIPTION OF ARTICLES  AG1:  CUSTOMSR ORDER ACCURATE and secure, and verified that product unitoding from tanker is same product contained in destination tank.  CUSTOMS or Priver Signature if VME)  AG1:  CUSTOMS or Priver Signature if VME)  AG2 GARTER SIGNATURE / PICKUP DATE  Customer for Driver Signature if VME)  CARTER SIGNATURE / PICKUP DATE  Control of the product contained in destination tank.  CUSTOMS or Driver Signature if VME)  CARTER SIGNATURE / PICKUP DATE  Control of the representation secondary in the specifically and are in properly related to the control of the specifically and the specifical or control of the representation value made available and occurred to the place of the specifical or control of the representation secondary in the specifical or control of the representation of the proper of the place of the specifical or control or the representation was made available and or the specifical or control or the representation secondary in the specifical or control or the representation secondary in the specifical or control or the representation or control or the representation of the control or control or the representation or control or the representation as a quality control system to control or control or the representation as a quality control of the place of the specifical or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or control or	100A						SHIPM	ENT: 3782	216
Freight Charge Term:  (Recight charges are PREPAID  unless marked otherwise)  ROBER MUNBER  ### OF THE BEST NO  GOT UNN RH DESCRIPTION OF ARTICLES  OTH UNN RH DESCRIPTION OF ARTICLES  API:  CUSTOMER AND RH DESCRIPTION OF ARTICLES  API:  Total  21606  2998  CUSTOMER ARE Verified that tank has capacity to receive ordered quantity, verified hose hookups & any manifolds are open, accurate and secure, and verified that product unloading from tanker is same product contained in destination tank.  CUBLOMER OF Driver Signature if VMI)  ARE CHARLES OF DRIVER BY DEST NO  FOR TYPE DEST NO.  FOR THE BILL OF CONFORMATY OF ARTICLES  API:  Total  21606  2998  CUSTOMER ARE Verified that tank has capacity to receive ordered quantity, verified hose hookups & any manifolds are open, accurate and secure, and verified that product unloading from tanker is same product contained in destination tank.  CUBLOMER OF DRIVER Signature if VMI)  ARE CHARLES OF ARTICLES  COPPY  CARRIER STONATORS / PICKUP DATE  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards.  Contractive desired placards		T CHARGES				572	718	,72723	3
CUSTONER ORDER NUMBER # of PXGS WEIGHT IN LBS PALLET DELIVER BY DEST NO FO TYPE DSPT NO.  1975-4  OTY UoM HM DESCRIPTION OF ARTICLES  3000 GAL 50000035 - Shell Turbo 011 J 32 BULK 21606 2998  Customer has verified that tank has capacity to receive ordered quantity, verified hose hookups & any manifolds are open, accurate and secure, and verified that product unloading from tanker is same product contained in destination tank.  Customer or Driver Signature if VMI)  DEFCEIVED  CARTER SIGNATURE / PICKUP DATE  Carrier admonstration was made and islated, and are in proper conductor for transportation according to the spoilcable quality carrier shows paging, the ecognized shall spoil to transportation according to the spoilcable gradients of the DT-FOFFRICKT CUSECT SHIPMENTS; II placehouse of the DT-FOFFRICKT CUSTOSHIPMENTS; II placehous of the DT-FOFFRICKT CUSTOSHIPMENTS; II placehous of the DT-FOFFRICKT CUSTOSHIPMENTS; II placehous of the DT-FOFFRICKT CUSTOSHIPMENTS; II placehous of the DT-FOFFRICKT CUSTOSHIPMENTS; II placehous of the DT-FOFFRICKT CUSTOSHIPMENTS; II placehous of the DT-FOFFRICKT counter and survival changes. And the DT-FOFFRICKT counter and survival changes are carried as applicable, by ceiling your supports and survival changes.  Carrier advanced and the consignes without survival in good order, except as noted.  CustoMen SIGNATURE / DATE  ADMINISTRATION DESTRUCT OF ACTION DESTRUCT Counter and world changes.  ADMINISTRATION DESTRUCT OF CONFORMITY - SOPUS Products and survival changes and survival changes and survival changes and survival changes and survival changes and survival changes and survival changes and survival changes and survival changes and survival changes and survival changes and survival changes and survival changes and survival changes.  ADMINISTRATION DESTRUCT OF CONFORMITY - SOPUS Products and survival changes and survival changes and survival changes and survival changes and survival changes and survival changes and survival changes and survival changes and survival changes and	FormesA Plastics	Carp			(Freight char	ges are E		with attached	d underlying
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OTY UON HM DESCRIPTION OF ARTICLES  3000 GAL 50000035 - Shell Turbo Oil J 32 BULK 21606 2998  TEMP (F): API:  Total 21606 2998  Customer has verified that tank has capacity to receive ordered quantity, verified hose hookups & any manifolds are open, accurate and secure, and verified that product unloading from tanker is same product contained in destination tank.  Customer or Driver Signature if VMI)  EXECTIVED  CARRIER SIGNATURS / PICKUP DATE  Carlier acknowledges recept of packages and required placands. Supplied materials are properly hastifed, packaged, marked and libeted, and are in proper on the consigner, the consigner the consigner shall sign the splicisties, and spliced on the consigner with the consigner with the consigner with the consigner with the consigner with the consigner with the consigner with the consigner with the following described above is received in good order, except as noted.  Customer of the light and towful charges.  Accurate without payment of feelight and towful charges.  Accurate without payment of feelight and towful charges.  Accurate without payment of feelight and towful charges.  Accurate without payment of feelight and towful charges.  Accurate without payment of feelight and towful charges.  Accurate without payment of feelight and towful charges.  Accurate without payment of feelight and towful charges.			IGHT IN LBS			DEST NO			DEPT NO.
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inted on02/25/2000 22 54	tatement: The carrier may decline to make deliver	y of the	P	برارسي			except as	noted.	ved in good aider,
	inted on 01/15/2000 32 54								

## nmental Services

ank Cleaning Division ags Rd. • Houston, TX 77021 (713) 676-1460 • Fax: (713) 676-1676

PO#	Customer:				Date:	
	JAN				1-3-9	
Tractor	Address:				Time:	
262	7010 MY	KAWA			4	
Trailer / Container Numbe	r Dropped By:				Need By:	
317	1 Cinhs	, 4			ASAP	
CONTAINER TYPE:  TANK TRAILER	TOTE BIN  ROLL TARP BO	ROLL DOOR BOX  X VACUUM BOX	ISO CONT FRAC TANK	AINER D	DRY BULK	UM TRUCK
Compartment #		Contained	Heel - Hazardous	Commence of the second		
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2 / ( ) ( )						
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5 CLEANING CODES		MODE BEREINED	왕석(1925년 - 12일 - 12일 전 12일 년 대의 1일 (12일 12일 12일 12일 12일 12일 12일 12일 12일 12일	TANK CNITOV	BEBLUT	
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1 Air Dry 2 Quick Rinse				%) #1 <del>20,0 \$2</del>	#3#4	
3 Cold Water Rinse		1 - 2 - 3 1 - 3 2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3	LEL (<10%) CO ² (<35 ppm)	#1 <u>0</u> #2 #1 <u>0</u> #2	#3#4 #3#4_	
4 Hot Water Rinse			Toxic Vapor		#3 #4 #3 #4	77 A 78 THE 1881 TO
5 Steam Only (Per Hour)		1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Signature:	ρ"'-Ψ"-		
6 Steam & Dry			Stripper Usage:			
7 Rinse, Steam & Dry						
8 Detergent Wash, Rinse	& Dry		Comments:			
9 Caustic Wash & Dry					18 3 3 3 3 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1	
10 Caustic Wash, Rinse &	Dry					
11 Waste Water Surcharg						
12 Solvent Wash (Diesel						
13 Solvent Wash (Strippe						
14 Exterior Tractor Wash	Nasyan a l					
15 Exterior Trailer Wash (	w/o Internal)					
16 Exterior Trailer Wash (	<del></del>					
17 Exterior Acid Brite Wa	<del></del>		Authorized Addit	ional Services:		<del></del>
18 Hand Labor (# Men / #		<del></del>				
19 Hydroblaster (# Hours		<del> </del>		:		
20 Solvent Wash (Green		<del></del>				
21 Passivation				<del> </del>	<del></del>	
Hose Cleaning						
Pump Cleaning			CES Environmental Servithoroughness of the tank	ices, Inc., Cleaning Division, washing procedure or the to	makes no guarantees wit	h respect to the
			moisture. Final inspection of t release CES Environmental S	the equipment remains the re	esponsibility of the custom sion, from any responsibili	er, and they hereb
Cleaned By:		Date / _ 3 . 09		ervices, Inc., Cleaning Division losses of equipment and/or		
		Date				
Inspected By:	<del></del>	_ Dato	Print Name:		Date	

## nmental Services

ik Cleaning Division
Rd. • Houston, TX 77021
3) 676-1460 • Fax: (713) 676-1676

Customer:	Jam		D	ate:
ractor Address:	Ţ	ime:		
Trailer / Container Number Dropped B	V. Mittan Petita		N	eed By:
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	☐ ISO CONT	AINER 🔲 D	DRY BULK
TANK TRAILER ROLL TAR	P BOX	FRAC TANK	POLY TANK	☐ VACUUM TRUCK
Compartment #	ast Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1   bo 6				
2				
3				
4				
5				<u> </u>
CLEANING CODES	WORK PERFORMED		TANK ENTRY PE	RMIT
1 Air Dry	WORK FEM ORIVIED	40 -04 -05 -		
2 Quick Rinse	oni ka ka mada ka kata ka ba ka ka ka ka ka ka ka ka ka ka ka ka ka	Oxygen (19.5% -23.5%	사용하는 등 보고 <b>보고 있</b> 다. 그 하는 것이 없는 것이 없다.	
3 Cold Water Rinse		LEL (<10%) CO ² (<35 ppm)	4. 14. 17. <b>773</b>	3#4#5 3#4#5
4 Hot Water Rinse		Toyio Vonor	#1 22 #10 #	
		Signature:	2"' <del>-</del>	
5 Steam Only (Per Hour)		Stripper Usage:		
6 Steam & Dry		Journal Coage.		
7 Rinse, Steam & Dry		Comments:		
8 Detergent Wash, Rinse & Dry				
9 Caustic Wash & Dry				
10 Caustic Wash, Rinse & Dry	/			
11 Waste Water Surcharge		4		
12 Solvent Wash (Diesel # Hours)				
13 Solvent Wash (Stripper)				
14 Exterior Tractor Wash				
15 Exterior Trailer Wash (w/o Internal)		4		
16 Exterior Trailer Wash (with Internal)		A 41 1 A 4 4 4 12		
17 Exterior Acid Brite Wash		Authorized Additi	onal Services:	
18 Hand Labor (# Men / # Hours)		<b> </b>	<del>, , , , , , , , , , , , , , , , , , , </del>	
19 Hydroblaster (# Hours)		<b></b>	<del></del>	
20 Solvent Wash (Green Stripper)				
21 Passivation				
Hose Cleaning	<del></del>			
Pump Cleaning		thoroughness of the tank	washing procedure or the total e	es no guarantees with respect to the limination of interior residues and/or
		release CES Environmental S	ne equipment remains the respor Services, Inc., Cleaning Division, the equipment was improperly of	nsibility of the customer, and they here from any responsibility for claims arising eaned, resulting in damage or loss.
Cleaned By: CP	Date 1-14-09	CES Environmental Se	ervices, Inc., Cleaning Division, is	in no manner responsible for any
		damages o	r losses of equipment and/or mat	erials left in their yard.
Inspected By:	Date	Print Name:		Date
		rant Natties		

# EPAHO011000925

## straight bill of lading ORIGINAL NOT NEGOTIABLE

## From ExxonMobil Oil Corporation | Sold to Cust: 1006293

Delivery Note 830390834  IF PREPAID, RENDER FREIGHT BILL IN DUPLICATE TO PERMANENT POST OFFICE ADDRESS OF SHIPPER:  Material  Quantity Shipped Open  98AR91  44,840  LB  please note this is a will call order customer to p/u 1/13/09 @5AM any problems call janice martin@409-839-1745 GEMS Order# 9159535 customer contact is kim woods@409-839-1265 s doucette x 6237  please note this is a will call order customer to p/u /07@5AM any problems call janice martin@409-839-1745 GEMS Order# customer contact is kim woods@409-839-1745 GEMS Order# customer contact is kim woods@409-839-1265 d ard 3312  *** THIS SHIPMENT CONTAINS OIL ***  *** 1 CARGO TANK **	UOM H Matl. Descr.	S H I P T O The ack the	ight Pro No.  LECT  MOBIL CHEM COATING CHEMICAL PRODUCTS DIVISION P/U BEAUMONT BEAUMONT TX 77704  c carrier named hereon, by signing this bill of lading mowledges receipt from ExxonMobil Oil Corporation
Material Quantity Weight UOM  Shipped Open  98AR91  44,840  44,840  44,840  black  please note this is a will call order customer to p/u 1/13/09 @5AN/ any problems call janice martin@409-839-1745 GEMS Order# 9159535 customer contact is kim woods@409-839-1265 s doucette x 6237  please note this is a will call order customer to p/u /07@5AM/ any problems call janice martin@409-839-1745 GEMS Order# customer contact is kim woods@409-839-1745 d ard 3312  *** THIS SHIPMENT CONTAINS OIL ***	Desc M	iption The ack the	CHEMICAL PRODUCTS DIVISION P/U BEAUMONT BEAUMONT TX 77704  c carrier named hereon, by signing this bill of lading
Shipped Open  98AR91  44,840  44,840  44,840  44,840  44,840  please note this is a will call order customer to p/u 1/13/09 @5AN/l any problems call janice martin@409-839-1745 GEMS Order# 9159535 customer contact is kim woods@409-839-1265 s doucette x 6237  please note this is a will call order /07@5AM any problems call janice martin@409-839-1745 GEMS Order# customer contact is kim woods@409-839-1265 d ard 3312  *** THIS SHIPMENT CONTAINS OIL ***	Desc M	ack the	carrier named hereon, by signing this bill of lading
please note this is a will call order customer to p/u 1/13/09 @5AM any problems call janice martin@409-839-1745 GEMS Order# 9159535 customer contact is kim woods@409-839-1265 s doucette x 6237  please note this is a will call order customer to p/u /07@5AM any problems call janice martin@409-839-1745 GEMS Order# customer contact is kim woods@409-839-1265 d ard 3312  *** THIS SHIPMENT CONTAINS OIL ***			property described hereon, in apparent good order,
	RESIDUE: "LA	of deswork work ladily position to destance and mutuality said destance and mutuality said destance and mutuality said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said destance and said d	sept as noted (contents and condition of contents packages unknown), marked, consigned, and stined as indicated hereon, which said carrier (the rd carrier being understood throughout this bill of ing as meaning any person or corporation in session of the property under the contract) agrees carry to its usual place of delivery at said stination if on its route, otherwise to deliver to other carrier on the route to said destination. It is tually agreed, as to each carrier of all or any of tually agreed, as to each party at any time exested in all or any of said property, that every vice to be performed hereunder shall be subject to the terms and conditions of the contract.  Is bill of lading does not in and of itself constitute contract of carriage. If a prepaid shipment, this bill lading is subject to the contract in effect between rier and ExxonMobil's third party logistics provider. In a freight collect shipment, this bill of lading is a cept of goods only and a carrier shall have no ourse on consignor for payment of freight and other arges for such freight collect shipments.  Bulk truck: The carrier certifies that the cargo tank oppiled for this shipment is a proper container for the paper.
Total Pieces 44,840 FOR HELP IN EMERGEN INVOLVING SPILL, LEAK, OR EXPOSURE CALL TOLL (800)424-9300 DAY OR NIG	FIRE properly classified, described,	RECEIVED ABOVE PRODUCTS AND QUANT	e, shippers are required to state specifically in writing the agreed or the property is hereby

ental Services
aning Division
Houston, TX 77021

## TANK WASH WORK ORDER

Customer:			Date: / j
	NM		11/12/01
Address:			Time:/
			11:69
Container Number Dropped B	Moran ()		Need By:
TANK TRAILER TOTE BIN	P BOX VACUUM BOX	ISO CONTAINER FRAC TANK POLY TA	DRY BULK
	ast Contained	Heel - Hazardous Heel - Non-Ha	
CLEANING CODES	WORK PERFORMED	TANK ENTR	/ PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>81.0</u> #2_	#3 #4 #5
2 Quick Rinse		LEL (<10%) #1 #2	#3 #4 #5
3 Cold Water Rinse		CO ² (<35 ppm) #1 <u>g</u> #2_	#3#4#5 <u></u>
4 Hot Water Rinse		Toxic Vapor #1 #2	#3#4#5
5 Steam Only (Per Hour)		Signature:	
6 Steam & Dry		Stripper Usage:	
7 Rinse, Steam & Dry		집 역원 경기를 가는 운동을 하게 되었다.	
3 Detergent Wash, Rinse & Dry		Comments:	
9 Caustic Wash & Dry			
10 Caustic Wash, Rinse & Dry	<i>"</i>		
11 Waste Water Surcharge			
12 Solvent Wash (Diesel # Hours)			es de
13 Solvent Wash (Stripper)			
14 Exterior Tractor Wash			5 (5)
15 Exterior Trailer Wash (w/o Internal)			
16 Exterior Trailer Wash (with Internal)			
17 Exterior Acid Brite Wash		Authorized Additional Services:	
18 Hand Labor (# Men / # Hours)			
19 Hydroblaster (# Hours)			
20 Solvent Wash (Green Stripper)			
21 Passivation			
Hose Cleaning			
Pump Cleaning		CES Environmental Services, Inc., Cleaning Divisi thoroughness of the tank washing procedure or the	e total elimination of interior residues and/or
		moisture. Final inspection of the equipment remains the release CES Environmental Services, Inc., Cleaning D	division, from any responsibility for claims aris
Cleaned By:	Date 1-12-9	from any allegations that the equipment was impr CES Environmental Services, Inc., Cleaning Di	vision, is in no manner responsible for any
		damages or losses of equipment an	
量值长 化多电流 化二氯化氯酚磺胺二氯化二氯化			

S	itraight	t bill of	lading					Page: 1/1
0	RIGINAL - NO	T NEGOTIABLE			···· ExxonMol	oil Oil Corporati	Of Sold to Cust: 100	Print Date: 01/08/2009 19:37:33
				,	-on CAROLILIO	on on outpoids	bord to cuse: 100	×
Date 01/08/2009			CAC No. CB1	Carrier WILLCALL	BULK	Shipping Origin BEAUMONT BEP PL	E i	Container No.
Delivery No	ote	Order No.	Purchase	Order	Release	F.O.B.	Freight	Pro No.
830348125		236083845	197267			Source	COLLECT	
IF PREPAID, RENDE POST OFFICE ADDR		IN DUPLICATE TO	PERMANENT				J.A.M. DISTRIBUTING 7010 MYKAWA ROAD HOUSTON TX 77033 T O	
Material	Quant		eight U	MOU MO	H Matl. Desc	ription	The carrier named hereon, by acknowledges receipt from E	signing this bill of lading
98FT88	126189	LOAD ON PALL			M MOBILGARD M330,8  REC. OR ALL BULK  RESIDUE: "La	AST CONTAINED"	the property described hereor except as noted (contents a of packages unknown), redestined as indicated hereon word carrier being understool lading as meaning any personal property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property over all or any destination and as to earlier the property over all or any of the property over all or any of the property over all or any of the property over all or any of the property over all or any of the property over all or any of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the property of the propert	n, in apparent good order, and condition of contents marked, consigned, and n, which said carrier (the od throughout this bill of erson or corporation in moder the contract) agrees a ce of delivery at said otherwise to deliver to to said destination. It is carrier of all or any of portion of said route to che party at any time said property, that every bunder shall be subject to of the contract.  In and of itself constitute prepaid shipment, this bill ontract in effect between d party logistics provider, this bill of lading is a carrier shall have no rment of freight and other
Pieces	5000	FOR HELP	44.500.000.000.000.0000.0000.000.000.000	GENCIES abov	Signature:  Date:	RECEIVED ABOVE PRODUCTS AN	If bulk truck: The carrier cer supplied for this shipment is transportation of this commo shipper.  The fiber boxes used for this specifications set forth in th thereon, and all other require National Motor Freight Classif	a proper container for the dity as described by the shipment conform to the box maker's certificate ments of the Uniform and
		INVOLVING OR EXPOSUI (800)424-93(	RE CALL TO	K, FIRE propperson pack and transapplic properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson properson proper	erly classified, described, aged, marked and labeled, are in proper condition for sportation according to the icable regulations of the artment of Transportation.	declared value of property.  The agreed or declared v	nt on value, shippers are required to state sporalue of the property is hereby shipper to be not exceeding	ecifically in writing the agreed or Per

Carrier, Per

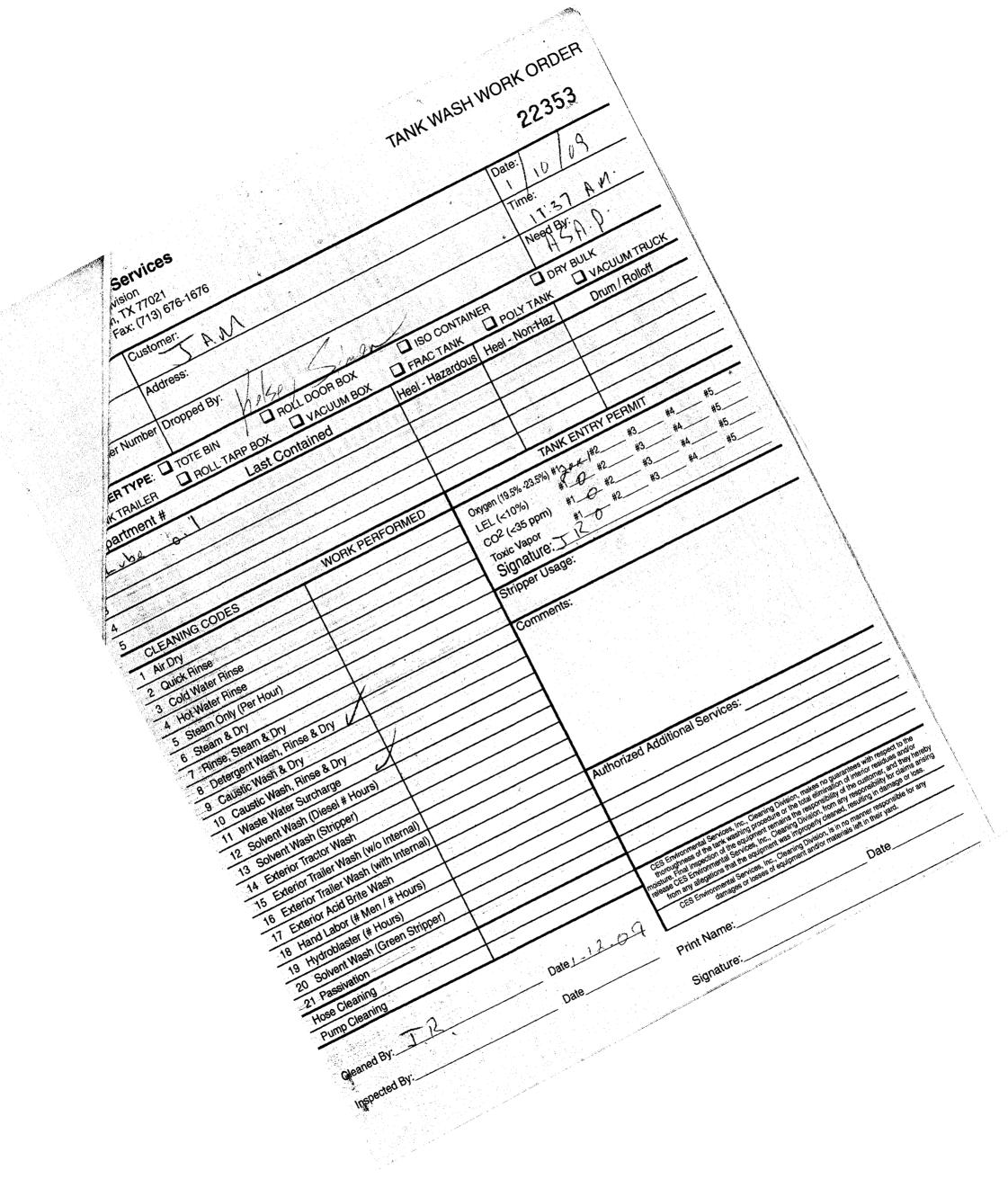
Shipper, Per

COQ provided to carrier

Quart sample provided to carrier

CUSTOMER COPY

EPAHO011000927



# straight bill of lading

						From	EXX	oniviot	on Un Corp	poratio		
Date	Ship '	To Cust.	SCAC N	o.	Carrier				Shipping (	Origin		
01/07/200	9 20214	78	WCBl		WILLCAL	L BULI	K		BEAUMONT I	B&P PLAI	NT \	
elivery 130335050	Note	Order N 2360436	1	chase (	Order	Re	elease		F.O.B. Source		Freight COLLECT	
	DER FREIGHT BIL DRESS OF SHIPPE	L IN DUPLICATE FR:	TO PERMANEN	T							S J.A.M. DISTRIBUTING 7010 MYKAWA ROAD HOUSTON TX 77033 T O	
Material	Quan Shipped	tity Open	Weight	MOM	UOM Desc	H		. Desc	ciption		The carrier named hereon, by signing this bill of acknowledges receipt from ExxonMobil Oil Corpot the property described hereon, in apparent good except as noted (contents and condition of co of packages unknown), marked, consigned, destined as indicated hereon, which said carrie word carrier being understood throughout this lading as meaning any person or corporati possession of the property under the contract) to carry to its usual place of delivery at destination if on its route, otherwise to deliver another carrier on the route to said destination mutually agreed, as to each carrier of all or a said property over all or any portion of said route.	
981218	6,512	·	50,409	NG	Net Gallo	ons	MOBILG	ARD 570,BUI	.K.			
	SHIP ENTIRI SHIPMENTS 0126146	LOAD ON P	ALLETS.CER	TIFICATE	DF ANALY	SIS REQ	OR ALL	BULK				
	*** THIS S	HIPMENT CON	TAINS OIL	* * *							destination and as to each interested in all or any of service to be performed here all the terms and conditions or	said property, that every under shall be subject to
							RES	idue: "I	AST CONTAI	NED"	This bill of lading does not in a contract of carriage. If a p of lading is subject to the concarrier and ExxonMobil's third lif a freight collect shipment, receipt of goods only and recourse on consignor for pay charges for such freight collect.	prepaid shipment, this bill ontract in effect between I party logistics provider, this bill of lading is a a carrier shall have no ment of freight and other
							33 <b>4</b> 527	ature: <u> </u>	-604		if bulk truck: The carrier certifies that the cargo supplied for this shipment is a proper container for transportation of this commodity as described by shipper.	
											The fiber boxes used for this specifications set forth in the thereon, and all other requirer National Motor Freight Classifi	e box maker's certificate ments of the Uniform and
Total Pieces 6,512		FOR HEL		EMERGI LEAK,	FIRE	above nar	o certify med mater classified, o	ials are lescribed,	RECEIVED ABOVE PRO			
otal Ship We	eight LB	OR EXPOS (800)424-9	and the contract of the contract of		FREE   GHT.	and are in transportation applicable	marked and proper con- on accordin- regulations of Transpor	dition for g to the of the	declared value of prop	erty. eclared valu	on value, shippers are required to state spe ie of the property is hereby hipper to be not exceeding	offically in writing the agreed or Per
cxonMobi	l Oil Corr	ooration			Shipper,	Per		Carrier, F		Со	Q provided to carrier art sample provided to carrier	CUSTOMER COPY

EPAHO011000929

Avironmental Services

er / Tank Cleaning Division
Griggs Rd. • Houston, TX 77021
one: (713) 676-1460 • Fax: (713) 676-1676

PO# Cu	stomer:			Date:
	MAC		[] 2.	1/15/09
Tractor Add	drėss:		Time: 9:42	
Trailer / Container Number   Dro	opped By:			Need By:
317	Surch HArris			
	E BIN ROLL DOOR BOX	☐ ISO CONT	AINER C	DRY BULK
TANK TRAILER DR	OLL TARP BOX	☐ FRAC TANK	POLY TAN	K 🔲 VACUUM TRUCK
Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 Libe of				
2				
3			Carrier Services	
4	en er store de en en en en en en en en en en en en en			
5		ja kantajan kajaja kantalan kaja kaja kaja kaja kaja kaja kaja ka	La College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College College Col	
CLEANING CODES	WORK PERFORMED		TANK ENTRY	PERMIT
1 Air Dry		Oxygen (19.5% -23.59	%) # <u>Q0,0</u> [#2	#3 #4 #5
2 Quick Rinse		LEL (<10%)	#1_0_#2	#3#4#5
3 Cold Water Rinse		CO ² (<35 ppm)		#3#4#5
4 Hot Water Rinse		Toxic Vapor	#1_0_#2	#3 #4 #5
5 Steam Only (Per Hour)		Signature:5		
6 Steam & Dry		Stripper Usage:		
7 Rinse, Steam & Dry				
8 Detergent Wash, Rinse & Dry		Comments:		
9 Caustic Wash & Dry				
10 Caustic Wash, Rinse & Dry				
11 Waste Water Surcharge				
12 Solvent Wash (Diesel # Hou	ırs)			
13 Solvent Wash (Stripper)				
14 Exterior Tractor Wash				
15 Exterior Trailer Wash (w/o In				
16 Exterior Trailer Wash (with Ir	nternal)			
17 Exterior Acid Brite Wash		Authorized Additi	onal Services:	
18 Hand Labor (# Men / # Hour	's)			
19 Hydroblaster (# Hours)			ing and the American	
20 Solvent Wash (Green Stripp	er)			
21 Passivation				
Hose Cleaning		050.5		
Pump Cleaning		moisture. Final inspection of the release CES Environmental S	washing procedure or the to he equipment remains the re Services, Inc., Cleaning Divis	makes no guarantees with respect to the otal elimination of interior residues and/or esponsibility of the customer, and they hereb sion, from any responsibility for claims arising
Cleaned By: 5 /	Date 1 - 15 - 09	CES Environmental Se		orly cleaned, resulting in damage or loss. on, is in no manner responsible for any r materials left in their yard.
Inspected By:	Date	Print Name:		Date
		Signature:		

onmental Services

Ank Cleaning Division

s Rd. • Houston, TX 77021

13) 676-1460 • Fax: (713) 676-1676

## TANK WASH WORK ORDER

	Customer:	r TĀM			Date: 1-14-09 Time: 11-5-3	
ractor	Address:					
Trailer / Container Num	nber Dropped By:	Anshow G	5m/4	ما المار		
CONTAINER TYPE:	TOTE BIN	ROLL DOOR BOX		AINER	DRY BULK	
TANK TRAILER	ROLL TARP	BOX UVACUUM BO	OX	POLY TANK	VACUUM TRUCK	
Compartment #	La	st Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff	
1 Lube o. 1						
2	en de la companya de la companya de la companya de la companya de la companya de la companya de la companya de La companya de la companya de la companya de la companya de la companya de la companya de la companya de la co					
3						
4	Anti-control of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of					
5	State Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee Committee	Community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the community of the commun				
CLEANING CODE	<b>ES</b>	WORK PERFORMED		TANK ENTRY F	PERMIT	
1 Air Dry			Oxygen (19.5% -23.5	%) # <i>DC </i> 4 #2	#3 #4 #5	
2 Quick Rinse			LEL (<10%)	#1_0#2	#3#4#5	
3 Cold Water Rinse			CO ² (<35 ppm)	#1 <u>/</u> #2	#3#4#5	
4 Hot Water Rinse			Toxic Vapor	#10 #2	#3 #4 #5	
5 Steam Only (Per Ho	ur)		Signature:	51		
6 Steam & Dry			Stripper Usage:	Stripper Usage:		
7 Rinse, Steam & Dry						
8 Detergent Wash, Rinse & Dry		Comments:	Comments:			
9 Caustic Wash & Dry						
10 Caustic Wash, Rin	se & Dry					
11 Waste Water Surcharge 12 Solvent Wash (Diesel # Hours)						
13 Solvent Wash (Stripper)						
14 Exterior Tractor Wash						
15 Exterior Trailer Was	sh (w/o Internal)					
16 Exterior Trailer Wash (with Internal)						
17 Exterior Acid Brite Wash			Authorized Addit	Authorized Additional Services:		
18 Hand Labor (# Mei	n / # Hours)					
19 Hydroblaster (# Ho	ours)					
20 Solvent Wash (Gre	en Stripper)					
21 Passivation						
Hose Cleaning						
Pump Cleaning			CES Environmental Servitoroughness of the tank	ices, Inc., Cleaning Division, r washing procedure or the tot	makes no guarantees with respect to the all elimination of interior residues and/or	
Anto Agray (Make Gyanga) (1975)		1 1	moisture. Final inspection of release CES Environmental	the equipment remains the re- Services, Inc., Cleaning Divisi	sponsibility of the customer, and they here on, from any responsibility for claims arisi	
Cleaned By:		Date 1 / 15 / 6	( ) )		ly cleaned, resulting in damage or loss.  n, is in no manner responsible for any	
Oleaneu by.		Date	damages o	or losses of equipment and/or	materials left in their yard.	
Inspected By:		Date	and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s	ny Smid		

### , Services

J Division
Juston, TX 77021

.460 • Fax: (713) 676-1676

Customer	Date:			
	1-3-9			
or Address:	Time:			
262 7010	10:30			
Trailer / Container Number Dropped E				Need By:
3/3	uls &			ASAP
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	☐ ISO CONTAINER ☐		DRY BULK
☐ TANK TRAILER ☐ ROLL TAI	RP BOX	☐ FRAC TANK	POLY TAN	K VACUUM TRUCK
	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 Lubo Oil				
2				
3				
4				
5 . 15 20 25 50				
CLEANING CODES	WORK PERFORMED		TANK ENTRY	PERMIT
1 Air Dry				#3 #4 #5
2 Quick Rinse			#1#2	#3#4#5
3 Cold Water Rinse		CO ² (<35 ppm)		#3 #4 #5
4 Hot Water Rinse		Toxic Vapor		#3#5
5 Steam Only (Per Hour)		Signature: <u>≤</u> ∄		
6 Steam & Dry		Stripper Usage:		
7 Rinse, Steam & Dry				
8 Detergent Wash, Rinse & Dry		Comments:		
9 Caustic Wash & Dry				
10 Caustic Wash, Rinse & Dry				
11 Waste Water Surcharge		1		
12 Solvent Wash (Diesel # Hours)				
13 Solvent Wash (Stripper)				
14 Exterior Tractor Wash				
15 Exterior Trailer Wash (w/o Internal)				
16 Exterior Trailer Wash (with Internal)				
17 Exterior Acid Brite Wash		Authorized Additional Services:		
18 Hand Labor (# Men / # Hours)				
19 Hydroblaster (# Hours)				
20 Solvent Wash (Green Stripper)				
21 Passivation				
Hose Cleaning				
Pump Cleaning		thoroughness of the tank	washing procedure or the to	makes no guarantees with respect to the tall elimination of interior residues and/or
		release CES Environmental	Services, Inc., Cleaning Divis	sponsibility of the customer, and they hereby ion, from any responsibility for claims arising
Cleaned By:	Date <u> </u>	from any allegations that the equipment was improperly cleaned, resulting in damage or loss.  CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any		
	<del></del>	damages o	r losses of equipment and/or	materials left in their yard.
Inspected By:	Date	Print Name:		Date
		i interactio.		Dato
		Signature:		

## *Ase*rvices

# TANK WASH WORK ORDER

Division Guston, TX 77021 60 • Fax: (713) 676-1676

60 • Fax: (71	3) 676-1676			23001
Custom	er:	·		Date:
	-EES	<u> </u>		5/14/09
Address	\$:			Time:
2650			· ·	830 pm
Trailer / Container Number Droppe	d By			Need By:
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	ISO CONT	AINED T	DRY BULK
TANK TRAILER ROLL 1		FRAC TANK	POLY TANK	
Compartment #	Last Contained	Heel - Hazardous	and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s	Drum / Rolloff
1 Saffi A- isl	Last Oomanica	Tieer - Tiazardous	Ticol Homilaz	Digiti / Hollon
2 party				
3				
4				
5				
CLEANING CODES	WORK PERFORMED	****	TANK ENTRY F	PERMIT
1 Air Dry		Oxygen (19.5% -23.59		#3 #4 #5
2 Quick Rinse		LEL (<10%)	#1 1/ #2	#3#4#5
3 Cold Water Rinse	,	CO ² (<35 ppm)	#1 <u>/</u> #2	#3#5
4 Hot Water Rinse		Toxic Vapor	#1/ #2	#3 #4 #5
5 Steam Only (Per Hour)		Signature:		
6 Steam & Dry		Stripper Usage:		
7 Rinse, Steam & Dry				
8 Detergent Wash, Rinse & Dry		Comments:		
9 Caustic Wash & Dry		4		•
10 Caustic Wash, Rinse & Dry	<del></del>	4		4
<ul><li>11 Waste Water Surcharge</li><li>12 Solvent Wash (Diesel # Hours)</li></ul>	<del></del>			1100
13 Solvent Wash (Stripper)		-	off of	
14 Exterior Tractor Wash		1 601	014 1 (*	<b>A</b> . X
15 Exterior Trailer Wash (w/o Interna	1)	1 / 1	$20^{\circ}$	
16 Exterior Trailer Wash (with Interna	<del></del>	†	<b>y</b> 0	
17 Exterior Acid Brite Wash		Authorized Additi		e de la grande de composito de la composito de la composito de la composito de la composito de la composito de
18 Hand Labor (# Men / # Hours)		-		
19 Hydroblaster (# Hours)				
20 Solvent Wash (Green Stripper)			· · · · · · · · · · · · · · · · · · ·	
21 Passivation				
Hose Cleaning				
Pump Cleaning		thoroughness of the tank	washing procedure or the tot	nakes no guarantees with respect to the al elimination of interior residues and/or
alamate IP	5/10/09	from any allegations that	services, Inc., Cleaning Division the equipment was improper	sponsibility of the customer, and they hereby on, from any responsibility for claims arising y cleaned, resulting in damage or loss.
Cleaned By:	Date/		rvices, Inc., Cleaning Division r losses of equipment and/or	n, is in no manner responsible for any materials left in their yard.
Inspected By:	Date	Print Name:		Date
		Signature:		·
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Pacific Chemicals LLC (Shipper/Consigner)	COOL	21 L, AIX			Date 05/06/09	
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To: 1079-01 CHAMPION TECHNOLOGIES		(Consignee)	If charge "Prepaid	es are prepa d."	PREPD & BI	
SHIP TO ADDRESS: 3130 FM 521			to apply	ed \$ in prepayme	ent of the charges on the	
CITY, STATE, ZIP: FRESNO, TX 77545 USA			Per	y described h Ager	nt or Cashier	
ROUTE:			(The sig	prepaid)	acknowledges only the	
DELIVERING CARRIER: DESTINATION:  LEE'S TRUCKING COMPANY			Advance	ed \$	vec between two d	
CAR INITIALS AND NUMBER: SEAL NUMBER(S):		4(	by a car	rier by water	ves between two ports r, the law requires I shall state whether I per's weight"	
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DESCRIPTION FOR FREIGHT RATING PURPOSES:		RAIL CAR TRIP LEA	ASED		Pacific Chemicals LLC valure of Consignor)	
SPECIAL INSTRUCTIONS		1 1/2				
PO# 77468 Deliver On 05/07/2009 1 PM LOAD 45,000 LBS. SEND COA W/SHIPMENT.	ţi.	July !	in.	•		
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THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGI CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT O			RE IN PR	OPER :		
ACCEDED ACCOUNTATION INCOMINATION ATTACABLE	• . •	ABEL(S) APPLIED STRIPE OR PROI	D SPE	ECIFIC 1	ΓAG	
Georgia-Pacific Chemicals LLC  Per HWY 82/PAPERMILL RG CROSSETT, AR 71635 870-567-7200	CAO				A	
APPROPRIATE PLACARDS CORRECTLY AFFIXED		EMERGENCY GU	IDE BO	OK LOCA	ATED IN CAB	
Carrier: Per	J.					
This Bill of Lading is to be signed by the shipper and agent of carrier issuing same.)					CH 7069-L (1/97)	

nmental Services

ggs Rd. • Houston, TX 77021 ane: (713) 676-1460 • Fax: (713) 676-1676

Morie. (				-	
PO# Custome	" / FE'S TRUCK			Date: 5-12	-09
	Lees mode	<u> </u>		<del></del>	
Tractor Address	ELDORADO, AL	· vaggarva		Time:	
Trailer / Container Number Dropped	By: /// / / /			Need By:	
965	Willie TOIN	764		454	
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	☐ ISO CONT	AINER [	DRY BULK	
TANK TRAILER ROLL T	ARP BOX	☐ FRAC TANK	POLY TAN	K 🔲 VAC	UUM TRUCK
Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum /	Rolloff
1 Tall Oil					
2					
3					
4					
5					
CLEANING CODES	WORK PERFORMED		TANK ENTRY	PERMIT	
1 Air Dry		Oxygen (19.5% -23.5	%) #1 <u>2/</u> 0 #2	#3#4	#5
2 Quick Rinse		LEL (<10%)	#1#2	#3 #4	<u>#5</u>
3 Cold Water Rinse		CO ² (<35 ppm)	#1 #2		#5
4 Hot Water Rinse		Toxic Vapor	Z ^{1_0} _ #2	#3 #4	#5
5 Steam Only (Per Hour)		Signature:			
6 Steam & Dry	<del>                                     </del>	Stripper Usage:			
7 Rinse, Steam & Dry	+/	Commente		· · · · · · · · · · · · · · · · · · ·	
8 Detergent Wash, Rinse & Dry	<del> </del>	Comments:			5 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
9 Caustic Wash & Dry	<del>+</del>				
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11 Waste Water Surcharge	<del> </del>				
12 Solvent Wash (Diesel # Hours)	<del> </del>				
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18 Hand Labor (# Men / # Hours)  19 Hydroblaster (# Hours)					
20 Solvent Wash (Green Stripper)					
21 Passivation					
Hose Cleaning				atti (1900) orani il Dipperori algrego e nalegger antigento	
Pump Cleaning		CES Environmental Servi	ces, Inc., Cleaning Division, washing procedure or the to	makes no guarantees w	ith respect to the
		moisture. Final inspection of the release CES Environmental S	he equipment remains the re Services, Inc., Cleaning Divis	sponsibility of the custo ion, from any responsib	mer, and they hereby lity for claims arising
Cleaned By:	Date 5-12-9	from any allegations that CES Environmental Se	the equipment was improper ervices, Inc., Cleaning Division r losses of equipment and/or	rly cleaned, resulting in on, is in no manner respo	damage or loss. onsible for any
Inspected By:	Date	Print Name:			
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THIS SHIPPING ORDER must be legibly filled in, in ink, in indelible Pencil, or in Page Shipper's No. 70191-1 Carbon and retained by the Agent. 1 OF 1 Agent's No. RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading 05/10/09 From: Georgia-Pacific Chemicals LLC (Shipper/Consigner) AT CROSSETT, AR The property described below has been recieved by Carrier in apparent good order, except as noted below, and is marked, consigned and destined as indicated below. Carrier agrees to carry the property to destination, if on its route, otherwise to deliver to another carrier on the route to said destination. Each carrier of, and any party at any time interested in, all or any of said property over all or any portion of said route to destination agrees to perform every service required hereby in accordance with the applicable contract(s), if any, believen Georgia-Pacific and Carrier, and otherwise subject to the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) if this is a rail or rail-water shipment, in the Uniform Freight Classification, and (2) if this is a motor carrier shipment, in the National Motor Freight Classification. If charges are prepaid, write or stamp here, "Prepaid." PREPAID (Consignee) 2067-01 LAMBERTI USA, INC. PREPAID SHIP TO ADDRESS: US 59 @ COUNTY RD 212 to apply in prepayment of the charges on the property described hereon CITY, STATE, ZIP: Agent or Cashier HUNGERFORD, TX 77448 USA (The signature here acknowledges only the ROUTE: Charges Advanced \$ DELIVERING CARRIER:
LEE'S TRUCKING COMPANY **DESTINATION:** *If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight" CAR INITIALS AND NUMBER SEAL NUMBER(S): NO. AND TYPE WFIGHT* BASIC DESCRIPTION AND ASSOCIATED INFORMATION OF PACKAGES Subject to Correction 1 TT HOT Elevated temperature liquid, n.o.s.; 9; UN 3257; III TARE XTOL 656 MIXED TALL OIL ACIDS NET PTBP-0656 All transportation provided All transportation provided hereunder is subject to the terms of Seztion 7 of the respective bills of lading identified above as if Georgia-Pacific initialed the Section 7 provision on the face of that Bill of Lading with respect to each shipment described below. Georgia-Pacific Chemicals LLC DESCRIPTION FOR FREIGHT RATING PURPOSES: **RAIL CAR TRIP LEASED** (Signature of Consignor) TO CONSIGNEE SPECIAL INSTRUCTIONS PO# 4500269369 Deliver On 05/11/2009 NOON Load 45,000 lbs. COA to accompany shipment. XTOL 656 -PRODUCT CODE "M099701-000000" THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION. **EMERGENCY RESPONSE** APPROPRIATE PLACARDS OSHA TAG(S)/LABEL(S) APPLIED OFFERED/CORRECTLY INFORMATION ATTATCHED PRODUCT SPECIFIC LABEL, TAG, OR BAG AFFIXED POST OFFICE ADDRESS AND TELEPHONE NUMBER OF ORIGIN Georgia, Pacific Chemicals LLC

40 Webl 5-10-09 133 Peachtree St. N.E. Atlanta, Georgia 30303

HWY 82/PAPERMILL ROAD / P.O. BOX 520 CROSSETT, AR 71635

870-567-7200

APPROPRIATE PLACARDS CORRECTLY AFFIXED

EMERGENCY GUIDE BOOK LOCATED IN CAB

Carrier:

Per

(This Bill of Lading is to be signed by the shipper and agent of carrier issuing same.)



Cleaning Division
Rd. • Houston, TX 77021
(13) 676-1460 • Fax: (713) 676-1676

rO# C	ustomer:	210			Date:	. 0
	<u></u>	215			5-19-	-04
Tractor A	ddress:				Time:	
railer / Container Number D	The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s	nk Davis	. *		Need By:	P
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CLEANING CODES	\	WORK PERFORMED		TANK ENTRY	PERMIT	
1 Air Dry			Oxygen (19.5% -23.5%		#3 #4	#5
2 Quick Rinse		·	LEL (<10%)	#1 <u>0</u> #2	#3 #4	#5 #5
3 Cold Water Rinse			CO ² (<35 ppm)	#1_0_#2	#3#4	#5
4 Hot Water Rinse	<del></del>		Toxic Vapor	#1 #2	#3#4	#5
5 Steam Only (Per Hour)			☐ Signature ∑ ¥			
6 Steam & Dry			Stripper Usage:			
7 Rinse, Steam & Dry	<del>- /-</del>		7			
8 Detergent Wash, Rinse & D	ry .	<del></del>	Comments:			
9 Caustic Wash & Dry	1		7			
10 Caustic Wash, Rinse & Dr	y /		7			
11 Waste Water Surcharge			7			
12 Solvent Wash (Diesel # Ho	ours)					
13 Solvent Wash (Stripper)						
14 Exterior Tractor Wash			7			
15 Exterior Trailer Wash (w/o	Internal)					
16 Exterior Trailer Wash (with	Internal)		1			
17 Exterior Acid Brite Wash			Authorized Additi	onal Services:		em litro-a trappa a ser to dell'a ser _{le} consider
18 Hand Labor (# Men / # Ho	urs)			<del></del>		
19 Hydroblaster (# Hours)						
20 Solvent Wash (Green Strip	per)					
21 Passivation						
Hose Cleaning						
Pump Cleaning			CES Environmental Servi	ces, Inc., Cleaning Division, washing procedure or the to	makes no guarantees with tal elimination of interior re	respect to the sidues and/or
Cleaned By:	$\mathcal{R}$	Date 5 - 19 - 09	moisture. Final inspection of the release CES Environmental S from any allegations that	ne equipment remains the re	sponsibility of the custome ion, from any responsibility rly cleaned, resulting in da	r, and they hen for claims aris mage or loss.
	<del>***</del>		damages of	losses of equipment and/or	materials left in their yard.	
Inspected By:			Print Name	ANK	Date	19/19
			S. T. T. T. T. T. T. T. T. T. T. T. T. T.	- h.11.		

NG ORDER must be legibly filled in, in ink, in indelible Pencil, or in Shipper's No. Page 04406-1 d retained by the Agent. 1 OF 1 Agent's No. RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading 05/16/09 CROSSETT, AR From: Georgia-Pacific Chemicals LLC (Shipper/Consigner) AT The property described below has been recieved by Carrier in apparent good order, except as noted below, and is marked, consigned and destined as indicated below. Carrier agrees to carry the property to destination, if on its route, otherwise to deliver to another carrier on the route to said destination. Each carrier of, and any party at any time interested in, all or any of said property over all or any portion of said route to destination agrees to perform every service required hereby in accordance with the applicable control(s), if any, between Georgia-Pacific and Carrier, and otherwise subject to the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) if this is a rail or rail-water shipment, in the Uniform Freight Classification, and (2) If charges are prepaid, write or stamp here, "Prepaid." (Consignee) **PREPAID** 3213-01 MOSAIC POTASH CARLSBAD INC \$ Received 1361 POTASH MINES ROAD to apply in prepayment of the charges on the property described hereon CITY, STATE, ZIP: Agent or Cashier CARLSBAD, NM 88220 Per (The signature here acknowledges only the ROUTE: amount prepaid ) Charges Advanced \$ DELIVERING CARRIER: DESTINATION: LEE'S TRUCKING COMPANY *If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight" CAR INITIALS AND NUMBER: SEAL NUMBER(S): NO. AND TYPE OF PACKAGES WEIGHT* BASIC DESCRIPTION AND ASSOCIATED INFORMATION Subject to Correction GROSS ** NON-REGULATED ** 1 TT TALON 6450 MINING DEPRESSANT RUMN-6450 NET All transportation provided hereunder is subject to the terms of Section 7 of the respective bills of lading identified above as if Georgia-Pacific initialed the Section 7 provision on the face of that Bill of Lading with respect to each shipment described below. Georgia-Pacific Chemicals LLC DESCRIPTION FOR FREIGHT RATING PURPOSES: RAIL CAR TRIP LEASED TO CONSIGNEE (Signature of Consignor) SPECIAL INSTRUCTIONS PO# N17158 Deliver On 05/18/2009 7 AM Ship 45,000 lbs To be unloaded with plant compressed air THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION. APPROPRIATE PLACARDS **EMERGENCY RESPONSE** OSHA TAG(S)/LABEL(S) APPLIED OFFERED/CORRECTLY INFORMATION ATTATCHED PRODUCT SPECIFIC LABEL, TAG, OR BAG **AFFIXED** POST OFFICE ADDRESS AND TELEPHONE NUMBER OF ORIGIN Georgia-Pacific Chemicals LLC HWY 82/PAPERMILL ROAD

APPROPRIATE PLACARDS CORRECTLY AFFIXED

133 Peachtree St. N.E. Atlanta, Georgia 30303

EMERGENCY GUIDE BOOK LOCATED IN CAB

Carrier: LEE'S Percy Jank Uma

CROSSETT, AR 71635

870-567-7200

(This Bill of Lading is to be signed by the shipper and agent of carrier issuing same.)

CH 7069-L (1/97)

**Ironmental Services** 

Tank Cleaning Division

ggs Rg. • Houston, TX 77021

(713) 676-1460 • Fax: (713) 676-1676

Custome	Customer: 18e's Trucking					
Tractor 2880 Address:	Time: 16 45					
Trailer / Container Number Dropped	By:,	1		Need By:		
1075	Michael Gard	PM				
CONTAINER TYPE: TOTE BIN	ROLL DOOR BOX	☐ ISO CONT	AINER C	DRY BULK		
TANK TRAILER ROLL T		☐ FRAC TANK	POLY TANK			
Compartment #	Last Contained	Heel - Hazardous		Drum / Rolloff		
1	2999					
2 Ful Add						
3						
4						
5			· · · · · · · · · · · · · · · · · · ·			
CLEANING CODES	WORK PERFORMED		TANK ENTRY F	PERMIT		
1 Air Dry		Oxygen (19.5% -23.5	*14	#3 #4 #5		
2 Quick Rinse		LEL (<10%)	#1 /P #2	#3#4#5		
3 Cold Water Rinse		CO ² (<35 ppm)	#1#2	#3#4#5		
4 Hot Water Rinse		Toxic Vapor	#1 0 #2	#3 #4 #5		
5 Steam Only (Per Hour)	<u> </u>	Signature:	JAK			
6 Steam & Dry		Stripper Usage:	<u> </u>			
7 Rinse, Steam & Dry						
8 Detergent Wash, Rinse & Dry		Comments:				
9 Caustic Wash & Dry						
10 Caustic Wash, Rinse & Dry		$\frac{1}{2}$	. 1			
11 Waste Water Surcharge	/		odor Fre	$\varphi$		
12 Solvent Wash (Diesel # Hours)		4				
13 Solvent Wash (Stripper)		4	* * * * * * * * * * * * * * * * * * *			
14 Exterior Tractor Wash				P. Carrier		
15 Exterior Trailer Wash (w/o Internal)		4				
16 Exterior Trailer Wash (with Internal 17 Exterior Acid Brite Wash	7	Authorized Addit	ional Services:			
18 Hand Labor (# Men / # Hours)	/	- Additionized Addit	onal Del Vices.			
19 Hydroblaster (# Hours)						
20 Solvent Wash (Green Stripper)						
21 Passivation						
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Pump Cleaning		CES Environmental Servi	ices, Inc., Cleaning Division, n	nakes no guarantees with respect to the		
Cleaned By:	Date 3 23-9	moisture. Final inspection of t release CES Environmental S from any allegations that CES Environmental Se	he equipment remains the res Services, Inc., Cleaning Division the equipment was improper	al elimination of interior residues and/or ponsibility of the customer, and they hereby on, from any responsibility for claims arising y cleaned, resulting in damage or loss. n, is in no manner responsible for any materials left in their yard.		
Inspected By:	Date	Print Name: M;	, , , , , , , , , , , , , , , , , , ,	Jen Date 3-23-9		
		Signature:	shall Days	Un		

### STŘAIGHT BILL OF LADING ORIGINAL – NOT NEGOTIABLE

#88374

BOL# 1010

CARRIER:	Lee's Tr	ucking
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DATE: 3-22-09

Shipper:

Pinnacle Biofuels, Inc. 117 Mac McGoogan Drive Crossett AR 71635 Consignee Information:

RTW Terminal 1005 Anchor Road Brownsville, TX 78521

The property described below, in apparent good order, except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the work carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions or the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

DESCRIPTION	GALLONS
1 T/T B99.9	6,351
	Gress 79880 Net 33260 Tare 46620
SHIPPER: Pinnacle Biofuels, Inc.  SIGNATURE: SIGNATURE: SIGNATURE:	R: Lee's Trucking  URE: Michael Haydun
DATE: 3-22-09 DATE:	3-22-9

ronmental Services
/ Tank Cleaning Division
riggs Rd. • Houston, TX 77021
1e: (713) 676-1460 • Fax: (713) 676-1676

PO #	Customer:	ı			Date:							
1015	l Le	es TR	UCKING		3-25-0	, 9						
Tractor	Address:		· · · · · · · · · · · · · · · · · · ·		Time:							
2380	<i>)</i>				11:15							
Trailer / Container Number	Dropped By:	1			Need By:							
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1 Air Dry			Oxygen (19.5% -23.5%	6) #201 #2	#3 #4	#5						
2 Quick Rinse		· · · · · · · · · · · · · · · · · · ·	LEL (<10%)		#3#4							
3 Cold Water Rinse			CO ² (<35 ppm)	#1 6 #2								
4 Hot Water Rinse		WW.77-4-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2	Toxic Vapor	#1 <u>p</u> #2	#3#4	#5						
5 Steam Only (Per Hour)			Signature: 4									
6 Steam & Dry			Stripper Usage:		The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s							
7 Rinse, Steam & Dry												
8 Detergent Wash, Rinse &	k Dry		Comments:									
9 Caustic Wash & Dry			1									
10 Caustic Wash, Rinse &	Dry		1									
11 Waste Water Surcharge	, /											
12 Solvent Wash (Diesel #	Hours)											
13 Solvent Wash (Stripper)	)											
14 Exterior Tractor Wash												
15 Exterior Trailer Wash (w	ı/o Internal)											
16 Exterior Trailer Wash (w	/ith Internal)				- %.,							
17 Exterior Acid Brite Wasl	h		Authorized Additi	onal Services:	ego - January Book (1984) and the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of							
18 Hand Labor (# Men / #	Hours)											
19 Hydroblaster (# Hours)					<u> </u>							
20 Solvent Wash (Green S	tripper)											
21 Passivation												
Hose Cleaning				, , , , , , , , , , , , , , , , , , ,		·						
Pump Cleaning			CES Environmental Servi	ces, Inc., Cleaning Division, r washing procedure or the tot	makes no guarantees with	1 respect to the						
			moisture. Final inspection of the release CES Environmental S from any allegations that	he equipment remains the res	sponsibility of the custome	er, and they hereby						
Cleaned By: 12.	· ·	Date 3 - 26 - 29	CES Environmental Se	ervices, Inc., Cleaning Division r losses of equipment and/or	n, is in no manner respon	sible for any						
Inspected By:		Date	Print Name:		Date							
			Signature:									

rironmental Services
Tank Cleaning Division
Griggs Rd. • Houston, TX 77021
One: (713) 676-1460 • Fax: (713) 676-1676

PO #	Customer:	<u>'</u> 5			Date: / 25	109
Tractor - 7920	Address:				Time: 7.37	
Trailer / Container Number [	Oropped By:				Need By:	
1165						
CONTAINER TYPE: TO	OTE BIN	ROLL DOOR BOX	☐ ISO CONT	AINER C	DRY BULK	
TANK TRAILER   TANK TRAILER	ROLL TARP BC	X VACUUM BO	X FRAC TANK	POLY TAN	K 🔲 VACUI	UM TRUCK
Compartment #	Last	Contained	Heel - Hazardous	Heel - Non-Haz	Drum / F	Rolloff
175:0- Piesu			·			
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4						
5						
CLEANING CODES		WORK PERFORMED		TANK ENTRY	PERMIT	
1 Air Dry	manufacture defined a collection of Manufacture and		Oxygen (19.5% -23.5	%) # <i>]</i> #2	#3#4	#5·
2 Quick Rinse			LEL (<10%)	#1_0_ #2	#3 #4	#5
3 Cold Water Rinse			CO ² (<35 ppm)	#1 2 #2	#3 #4	#5
4 Hot Water Rinse			Toxic Vapor	g#1_p #2	#3 #4	#5
5 Steam Only (Per Hour)			Toxic Vapor Signature:	<i>P</i>		
6 Steam & Dry			Stripper Usage:			
7 Rinse, Steam & Dry					To the	
8 Detergent Wash, Rinse & I	Dry 🗸		Comments:	- 0		
9 Caustic Wash & Dry			$\Box$ $C$	7.A.C.		
10 Caustic Wash, Rinse & D	)ry		171			
11 Waste Water Surcharge						
12 Solvent Wash (Diesel # H	lours)				·	
13 Solvent Wash (Stripper)						
14 Exterior Tractor Wash						
15 Exterior Trailer Wash (w/c	o Internal)					3
16 Exterior Trailer Wash (with	h Internal)			A		er v sameler stelle stellende spektigsbergeren til de sakte
17 Exterior Acid Brite Wash			Authorized Addi	tional Services:		
18 Hand Labor (# Men / # He	ours)					
19 Hydroblaster (# Hours)						
20 Solvent Wash (Green Stri	ipper)					
21 Passivation						
Hose Cleaning					·	
Pump Cleaning			thoroughness of the tai	rvices, Inc., Cleaning Division nk washing procedure or the	total elimination of interior	residues and/or
Cleaned By:		Date 3 - 25 - 09	moisture. Final inspection or release CES Environmenta from any allegations the	if the equipment remains the al Services, Inc., Cleaning Division at the equipment was improposed services, Inc., Cleaning Division or losses of equipment and/	responsibility of the custor vision, from any responsibi- perly cleaned, resulting in co- sion, is in no manner responsibility	mer, and they hereby ility for claims arising damage or loss. onsible for any
Inspected By:		Date	Print Name:		Date	
	8 .		Signature:			





### STRAIGHT BILL OF LADING ORIGINAL - NOT NEGOTIABLE

DATE: 3-23-09 CARRIER: Lee's Trucking

Shipper: Pinnacle Biofuels, Inc.

117 Mac McGoogan Drive Crossett AR 71635

Consignee Information:

**RTW Terminal** 1005 Anchor Road Brownsville, TX 78521

The property described below, in apparent good order, except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the work carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route. otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions or the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

	DESCRIPTION	GALLONS
1 T/T	B99.9	6,403
	*** ***********************************	
	Macid	Quai 3/05/09
SHIPPER: Pinnacl	$\mathcal{I}(\mathcal{I})$	CARRIER: Lee's Trucking
DATE: 3-	23-09	DATE: 3-23-09

Environmental Services

Mainer / Tank Cleaning Division

Mainer / Tank Cleaning Division

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	Address:					Time:	!
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CONTAINER TYPE:	OTE BIN	D BOLL DO	OR BOX	ISO CONTA	AINER	DRY BULK	
	ROLL TARE		JUM BOX	FRAC TANK	POLY TAN		CUUM TRUC
Compartment #		ast Contained	ومدابيه باليسانية المشالب النبيب	Heel - Hazardous	anderself or <u>All Miller Hart R. Miller</u>	The second section is not been dead or the second section in the second section is not been dead or the second section in the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second se	n / Rolloff
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5.	<del></del>					<del>                                     </del>	
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1 Air Dry	a, de la Son de artista de la companya			Oxygen (19.5% -23.5%	3 27 A	#3 #4	#5
2 Quick Rinse		······		LEL (<10%)	*1 \( \sigma \) #2	#3 #4	#5
3 Cold Water Rinse				CO ² (<35 ppm)	#1 0 #2		
4 Hot Water Rinse				Toxic Vapor	#1.5)#2	#3 #4	#5
5 Steam Only (Per Hour)					TE	/	<del></del>
6 Steam & Dry		<del></del>		Stripper Usage:		المسيرين والمستبدي	
7 Rinse, Steam & Dry							<b>.</b>
8 Detergent Wash, Rinse & I	Dry	<del>/</del>		Comments:		القدرون والمستحدث والمستحدث	
9 Caustic Wash & Dry							
10 Caustic Wash, Rinse & D	ry		[	,	\		
11 Waste Water Surcharge		/		WAi	time		
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13 Solvent Wash (Stripper)				and the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of the same of th	and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s		
14 Exterior Tractor Wash							į.
15 Exterior Trailer Wash (w/o	Internal)			1 1	14:16	and the same	
16 Exterior Trailer Wash (with	n Internal)						
17 Exterior Acid Brite Wash				Authorized Addition	onal Services:		
18 Hand Labor (# Men / # Ho	ours)					<del>na pang nggapang Pang Pang Pang Pang Pang</del>	
19 Hydroblaster (# Hours)	t growth of				-		
20 Solvent Wash (Green Stri	pper)						
21 Passivation						<del> </del>	ann to the second second second second second second second second second second second second second second s
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ump Cleaning				CES Environmental Service	es, Inc., Cleaning Division, washing procedure or the to	makes no guarantee	s with respect to the
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Sleaned By:	<del></del>	Date <u>3 - /</u>	9-9	CES Environmental Ser	the equipment was improper vices, Inc., Cleaning Division losses of equipment and/o	on, is in no manner re	sponsible for any
spected By:	·	Date		Print Name:	<del>Palacon Palacopy (de copy <u>o</u> copy para Palaco Palacondo co</del> ggerop)	hand the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street of the street	
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THIS MEMORANDUM is an acknowledgement that a bill of lading has been issued Page Shipper's No. 69822-1 and is not the Original Bill of Lading, nor a copy or duplicate, covering the property 1 OF 1 named herein, and is intended solely for filing or record Agent's No. RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading 03/18/09 From: Georgia-Pacific Chemicals LLC (Shipper/Consigner) AT . CROSSETT, AR The property described below has been recieved by Carrier in apparent good order, except as noted below, and is marked, consigned and destined as indicated below. Carrier agrees to carry the property to destination, if on its route, otherwise to deliver to another carrier on the route to said destination. Each carrier of, and any party at any time interested in, all or any of said property over all or any portion of said route to destination agrees to perform every service required hereby in accordance with the applicable contract(s), if any, between Georgia-Pacific and Carrier, and otherwise subject to the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) if this is a rail or rail-water shipment, in the Uniform Freight Classification, and (2) if this is a motor carrier shipment, in the National Motor Freight Classification. If charges are prepaid, write or stamp here, (Consignee) 1079-01 CHAMPION TECHNOLOGIES PREPD & BIL SHIP TO ADDRESS: Received \$ , - Padelan 3130 FM 521 to apply in prepayment of the charges on the property described hereon CITY, STATE, ZIP: Agent or Cashier FRESNO, TX 77545 USA (The signature here acknowledges only the amount prepaid ) DESTINATION: DELIVERING CARRIER LEE'S TRUCKING COMPANY "If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight" CAR INITIALS AND NUMBER: SEAL NUMBER(S): NO. AND TYPE WEIGHT' BASIC DESCRIPTION AND ASSOCIATED INFORMATION OF PACKAGES Subject to Correction GROSS ** NON-REGULATED ** 1 TT XTOL 0609 FORMULATED TALL OIL PTBP-0609 NET All transportation provided hereunder is subject to the terms of Section 7 of the respective bills of lading identified above as if Georgia-Pacific initiated the Section 7 provision on the face of that Bill of Lading with respect to each shipment described below. Georgia-Pacific Chemicals LLC DESCRIPTION FOR FREIGHT RATING PURPOSES: **RAIL CAR TRIP LEASED** (Signature of Consignor) TO CONSIGNEE SPECIAL INSTRUCTIONS PO# 75190 Deliver On 03/19/2009 8 am LOAD 45,000 LBS. Charles Burdian SEND COA W/SHIPMENT. THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION. OSHA TAG(S)/LABEL(S) APPLIED **EMERGENCY RESPONSE** APPROPRIATE PLACARDS OFFERED/CORRECTLY INFORMATION ATTATCHED PINK HORIZ STRIPE OR PROD SPECIFIC TAG AFFIXED POST OFFICE ADDRESS AND TELEPHONE NUMBER OF ORIGIN Georgia-Pacific Chemicals LLC HWY 82/PAPERMILL ROAD / P.O. BOX 520 CROSSETT, AR 71635 870-567-7200 133 Peachtree St. N.E. Atlanta, Georgia 30303

(This Bill of Lading is to be signed by the shipper and agent of carrier issuing same.)

APPROPRIATE PLACARDS CORRECTLY AFFIXED

Carrier:

EMERGENCY GUIDE BOOK LOCATED IN CAB

IN CASE OF EMERGENCY CALL CHEMTREC TOLL FREE (800) 424-9300 DAY OR NIGHT

Per

CH 7069-L (1/97)

TANK WASH WORK ORI

services ...ig Division Houston, TX 77021

, 076-1460 •	Fax: (713) 67	6-1676			C.	:033
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<b>/</b> .		ことろ			5-	19
Tractor	Address:				Time:	
2/050						
Trailer / Container Number	Dropped By:	SCOTT GL			Need By:	
1175	· www.	SCOTI GL	over		(15	11
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TANK TRAILER	ROLL TARP	BOX	FRAC TANK	POLY TANK	C VACI	JUM TRL
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2 Quick Rinse			LEL (<10%)	#1  #2  #2		
3 Cold Water Rinse		·	CO ² (<35 ppm)	#1 0 #2		
4 Hot Water Rinse			Toxic Vapor	#1 #2	_ #3 #4	#5
5 Steam Only (Per Hour)			Signature:	·		
6 Steam & Dry			Stripper Usage:			, eef
7 Rinse, Steam & Dry			7	u [®] 9∙		
8 Detergent Wash, Rinse 8	Dry .	/	Comments:			
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17 Exterior Acid Brite Was	h L		Authorized Addit	ional Services:		
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Pump Cleaning			thoroughness of the tank	ices, Inc., Cleaning Division, of washing procedure or the to	tal elimination of interior	r residues and/or
		7	release CES Environmental	the equipment remains the re- Services, Inc., Cleaning Divisit	ion, from any responsib	ility for claims arisi
Cleaned By:		Date 3 - 19-9	CES Environmental S	t the equipment was improper ervices, Inc., Cleaning Divisio	n, is in no manner resp	onsible for any
,			damages o	or losses of equipment and/or	materials left in their ya	rd.
Inspected By:		Date	Drint Name	ž	Doto	

Print Name:___

Tank Cleaning Division
alggs Rd. • Houston, TX 77021
ae: (713) 676-1460 • Fax: (713) 676-1676

### TANK WASH WORK ORDER

PO# Cu	stomer: LES			Date: 3/18/09
Tractor Add	dress:	· · · · · · · · · · · · · · · · · · ·		Time:
2610 E	El PORALO AR			Time.
Trailer Container Number Dro	opped By:			Need By:
2285	FRANK DAVIS			ASAK
CONTAINER TYPE: TOTAL		ISO CONT	AINER [	DRY BULK
TANK TRAILER R	OLL TARP BOX	FRAC TANK	POLY TAN	K VACUUM TRUCK
Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 Nitric Aci	<b>a</b> .			
2				
3				
4				
5				
CLEANING CODES	WORK PERFORMED		TANK ENTRY I	PERMIT
1 Air Dry		Oxygen (19.5% -23.59	%) #1 22 7 #2	#3 #4 #5
2 Quick Rinse		LEL (<10%)	#1 <u>/</u> #2	#3 #4 #5
3 Cold Water Rinse		CO ² (<35 ppm)	#1 #2	#3#5
4 Hot Water Rinse		Toxic Vapor	#1 <u></u> _#2	#3 #4 #5
5 Steam Only (Per Hour)		Signature:	2	
6 Steam & Dry		Stripper Usage:	· · · · · · · · · · · · · · · · · · ·	
7 Rinse, Steam & Dry		1		
8 Detergent Wash, Rinse & Dry	,	Comments:		· (*)
9 Caustic Wash & Dry		MACC	UUM. 7 ald Ex	= 4,
10 Caustic Wash, Rinse & Dry		VIIC	auri 1	,
11 Waste Water Surcharge		T - 7 = 81	WI FI	HERNAH
12 Solvent Wash (Diesel # Hou	rs)	1 WILKE	,	
13 Solvent Wash (Stripper)		•		
14 Exterior Tractor Wash				
15 Exterior Trailer Wash (w/o In	ternal)			
16 Exterior Trailer Wash (with In	iternal)		·	
17 Exterior Acid Brite Wash		Authorized Additi	onal Services:	anting in the second of the second of the second of the second of the second of the second of the second of the
18 Hand Labor (# Men / # Hour	s)		<del></del>	
19 Hydroblaster (# Hours)				
20 Solvent Wash (Green Strippe	er)			
21 Passivation				, , , , , , , , , , , , , , , , , , ,
Hose Cleaning	1-21	:		
Pump Cleaning		CES Environmental Servi	ces, Inc., Cleaning Division,	makes no guarantees with respect to the tal elimination of interior residues and/or
Cleaned By:	Date 3/10/69	moisture. Final inspection of the release CES Environmental Section any allegations that	ne equipment remains the re services, Inc., Cleaning Divis the equipment was imprope	sponsibility of the customer, and they hereby ion, from any responsibility for claims arising ty cleaned, resulting in damage or loss.  n, is in no manner responsible for any materials left in their yard.
Inspected By:	Date	Print Name: FR	PANK DAU	3 Date 3/18/09
		Signature:	Frank L	Jarris

F91	HIPPING ORDER	must be legibly filled Carbon, an	in, in ink, in Indeli	ble Pencil or in				
€.D.C73	E, subject to the classification (REV. 2-94)	ons and tariffs in offer FROM	et on the date of the	Sissue of this Ship CHEMICAL (D), ARKANSAS	ping Order COMPANY			
SHIPPER	ORDER SNO. 351128	3/13/09/	CUSTOMER P.O. N				TRUCK/CAR	OR VEHICLE
		S ARE TO DE PRINE SELOW TO IN	EPAID, WRITE	"PPD" ON 3E PREPAID"		TE SHIPPED	INITIALS AND	1388
PREPAID OF		Lee truc	king p/u	3pm	,	1	( )	1
TO THE	O INSURE PAYMENT IS SHIPPERS NUMBER JST BE SHOWN ON IEIGHT BILL.	Your Statem No. and El No. opposite	ent must show Dorado's Shipp each amount: tal.	Pro. per's also				
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800 LD		INTERCHAN		28514	The property des contents of packa the word carrier to possession of the destination of or it mutually agreed a destination and as the performed het Straight Bill of Life is a zail of it his a zail of the second carrier.	cribed below in apparent po ges unknown, marked consign paing, understood (throughout in property under the contract, it is route; otherwise in deliver is to each carrier of all or any to beach party at any time inte- teunder shall be subject to a acting, set forth 1) in Uniform it relievate shipmont or trellevate shipmont or	d order, except as ed and destined as in his contract as mee agrees to carry to a another carrier on of said property over rested in all or any of the terms and of Freight Classifical in the annicable of the profitcher and contract the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicable or the annicabl	noted, contents and condition of indicated below, which said carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and carrier, and conditions of the carrier classification or tartier, and conditions of the said.
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This is to ce	E CAPACITY SHEL entify that the above named material are in proper condition for train of Transportation.	L FULL als are properly classified, on asportation, according to	described, packaged, make applicable regulation	arked and				
	El Dorado Chemica	al Co. Shipper	Per WRITTEN SIGNA	Ship	per's imprint in fieu of ilssion.		nt, Per	roved by the Interstate Commerce
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nmental Services

nk Cleaning Division

Rd. • Houston, TX 77021

(13) 676-1460 • Fax: (713) 676-1676

# C	ustomer	; /			Date / 09
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11/15				N.	
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CLEANING CODES		WORK PERFORMED		TANK ENTRY F	PERMIT
1 Air Dry	<del></del>		Oxygen (19.5% -23.59	(6) #10 7) #2	#3 #4 #5
2 Quick Rinse			LEL (<10%)	#1 0 #2	#3 #4 #5
3 Cold Water Rinse			CO ² (<35 ppm)	#1 #2	#3#4#5
4 Hot Water Rinse			Toxic Vapor	#1 0 #2	#3#4#5
5 Steam Only (Per Hour)			Signature:	R	
6 Steam & Dry			Stripper Usage:		
7 Rinse, Steam & Dry					
8 Detergent Wash, Rinse & D	ry		Comments:		
9 Caustic Wash & Dry					
10 Caustic Wash, Rinse & Dr	y				Ţ.
11 Waste Water Surcharge			7		
12 Solvent Wash (Diesel # Ho	ours) '	ш	7		
13 Solvent Wash (Stripper)			7		
14 Exterior Tractor Wash					
15 Exterior Trailer Wash (w/o	Internal)		7		
16 Exterior Trailer Wash (with	Internal)		7		
17 Exterior Acid Brite Wash	3		Authorized Additi	onal Services:	
18 Hand Labor (# Men / # Ho	ours)		·		
19 Hydroblaster (# Hours)					
20 Solvent Wash (Green Strip	oper)				
21 Passivation					
Hose Cleaning					
Pump Cleaning			CES Environmental Servi	ces, Inc., Cleaning Division, r	makes no guarantees with respect to the tal elimination of interior residues and/or
-10		Date 3 /19 /19	moisture. Final inspection of the release CES Environmental Section from any allegations that	ne equipment remains the res Services, Inc., Cleaning Divisi the equipment was improper	sponsibility of the customer, and they hereby on, from any responsibility for claims arising by cleaned, resulting in damage or loss.
Cleaned By:		Date///	CES Environmental Se damages o	ervices, Inc., Cleaning Division r losses of equipment and/or	n, is in no manner responsible for any materials left in their yard.
Inspected By:		Date	Print Name:	at well in him	Date
				.9 2.	

# Sastrop Tank Wash

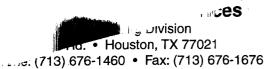
9029 Coulter Dr.

Bastrop, LA 71220
(318) 281-5050 (877) 281-TANK

FAX: (318) 281-6030

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Customer:			<u> Driver:</u>
Last Product:			Placard #
	op Tank Wash, Inc.	to perform	t product contained is accurate in all material respects the cleaning services indicated hereon:  gnature of Driver agent
☑ rank □ Pun	p DiHoses	°≥□ Tarkë	en 🗷 🖫 Fractor Ext. 🔲 Other
Procedure Air Dry only Steam Clean Gold Wash Hot Wash Detergent Wash Caustic Wash Presolve External Truck Wash External Fank wash External Dry Box Combo Pump Hoses # 4	Cost Dry 45.00  135.00 10.00  90.00 10.00  130.00 10.00  140.00 10.00  160.00 10.00  35.00  40.00  45.00  75.00  15.00  8.00	SPotal  Acces  Size	Tank Entry Permit  Oxygen (19.5% - 23.5%) #1 #2 #3  EEL (<10%)  GO2 (<35 ppm)  H2S  Fech Signature  Barrel Condition: □ Pits □ Stains □ Dents  Wash Tech: □ □ Free  15.00 per gallon over  Heel Disposal: Barrel # Tote #  Dispatch will be called if heel is over 5 gallons, if over 25 gallons, stank will need to be sent back to be drained
Hand labor per hr Waste Water Charge Call out fees after ho Fuel Surcharge DOW Prep Additional Charges	45.00 2 30 2 30 2 30 2 30 2 30 2 30 2 30 2	Das Das	The undersigned has examined the interior and exterior of the tank  Vessel as well as all component parts and is satisfied that the same  has been properly washed and dried.  Signature of driver agent
discription	Total <u> </u>	- 8	T-Check Fleet One Check ComCheck Check # 13 5 5



PO #	Customer	: , /			Date:/	/
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Tractor	Address:				Time:	1
					14.00	
Trailer / Container Number	Dropped E	Зу:			Need By:	
CONTAINER TYPE:	TOTE BIN	ROLL DOOR BOX	☐ ISO CONT	AINER [	DRY BULK	
TANK TRAILER	ROLL TAI	RP BOX 🔲 VACUUM BOX	FRAC TANK	POLY TAN	K 🔲 VACI	JUM TRUCK
Compartment #		Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum /	Rolloff
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2						
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CLEANING CODES		WORK PERFORMED		TANK ENTRY I	PERMIT	
1 Air Dry		,	Oxygen (19.5% -23.5	%) #D1 O#2	#3 #4	#5
2 Quick Rinse			LEL (<10%)	#1 #2	#3#4	#5
3 Cold Water Rinse			CO ² (<35 ppm)	#1 <u>0</u> #2		#5
4 Hot Water Rinse			Toxic Vapor	#1 <u> </u>	_ #3 #4	#5
5 Steam Only (Per Hour)			Signature:	76		
6 Steam & Dry			Stripper Usage:			
7 Rinse, Steam & Dry						
8 Detergent Wash, Rinse 8	ֆ Dry		Comments:	\		
9 Caustic Wash & Dry						
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18 Hand Labor (# Men / #	Hours)	·	·		·	
19 Hydroblaster (# Hours)			· · · · · · · · · · · · · · · · · · ·			
20 Solvent Wash (Green S	stripper)					
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Hose Cleaning			0505		ortuna ( roma, provincia, vacina) — influencia	
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		Date		ervices, Inc., Cleaning Division iosses of equipment and/or		
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			Signature:			To San London State of the San San San San San San San San San San

# ...... SILL OF LADING / SHORT FORM ORIGINAL / NON-NEGOTIABLE

	CAROUSI	EL SPEC.PRDTS	Consignee:		on Energy Service	es	Shippers Nur	nber
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	i			Golden M	eadow, LA 70357			
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190					100 Page 1			· · · · · · · · · · · · · · · · · · ·
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!	FOR CHEMIC	AL EMERGENCY – SPILL, LE	AK, FIRE, EXP	OSURE, OR A	CCIDENT CALL: C	HEMTEL (	800) 255-3924	
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nainer / Tank Cleaning Division 4904 Griggs Rd. • Houston, TX 77021 26387 Phone: (713) 676-1460 • Fax: (713) 676-1676 Customer: Date: Tractor Trailer / Container Number | Dropped By: Need By: Towits CONTAINER TYPE: TOTE BIN DRY BULK ISO CONTAINER BOLL DOOR BOX ☐ VACUUM BOX **VACUUM TRUCK** ROLL TARP BOX POLY TANK TANK TRAILER FRAC TANK **Last Contained** Heel - Hazardous Heel - Non-Haz Drum / Rolloff Compartment # FA 414 5 TANK ENTRY PERMIT **CLEANING CODES WORK PERFORMED** Oxygen (19.5% -23.5%) #4 0 #2 #3 1 Air Dry 2 Quick Rinse LEL (<10%) 3 Cold Water Rinse CO² (<35 ppm) #1 💙 #2 ____ #3____ #4____ #5_ Toxic Vapor *>* #2 #3 #4 #5 4 Hot Water Rinse Signature: 5 Steam Only (Per Hour) Stripper Usage: 6 Steam & Dry 7 Rinse, Steam & Dry Comments: 8 Detergent Wash, Rinse & Dry 9 Caustic Wash & Dry 10 Caustic Wash, Rinse & Dry 11 Waste Water Surcharge 12 Solvent Wash (Diesel # Hours) 13 Solvent Wash (Stripper) 14 Exterior Tractor Wash 15 Exterior Trailer Wash (w/o Internal) 16 Exterior Trailer Wash (with Internal) **Authorized Additional Services:** 17 Exterior Acid Brite Wash 18 Hand Labor (# Men / # Hours) 19 Hydroblaster (# Hours) 20 Solvent Wash (Green Stripper) 21 Passivation Hose Cleaning CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect t thoroughness of the tank washing procedure or the total elimination of interior residues are pisture. Final inspection of the equipment remains the responsibility of the customer, and the lease CES Environmental Services, Inc., Cleaning Division, from any responsibility for claim **Pump Cleaning** JL Date 2-10-9 from any allegations that the equipment was improperly cleaned, resulting in damage or I Cleaned By:____ CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for a damages or losses of equipment and/or materials left in their yard. Inspected By:_ Date Print Name: Date Signature:_

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vironmental Services



NO. AND TYPE

THIS MEMORANDUM is an acknowledgement that a bill of lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record

Shipper's No. Page 69280-1 1 OF 1 Agent's No.

ECEIVED, subject to the classifications and lawful.	y filed tariffs in effect on the date of the receipt by the o	carrier of the property described in the Original Bill of Lading

From: Georgia-Pacific Chemicals LLC (Shipper/Consigner)

CROSSETT, AR

02/09/09

The property described below has been recieved by Carrier in apparent good order, except as noted below, and is marked, consigned and destined as indicated below. Carrier agrees to carry the property to destination, if on its route, otherwise to deliver to another carrier on the route to said destination. Each carrier of, and any party at any time interested in, all or any of said property over all or any portion of said route to destination agrees to perform every service required hereby in accordance with the applicable contract(s), if any, between Georgia-Pacific and Carrier, and otherwase subject to the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) if this is a rail or rail-water shipment, in the Uniform Freight Classification, and (2) if this is a motor carrier shipment, in the National Motor Freight Classification.

If charges are prepaid, write or stamp here, "Prepaid." (Consignee) 1079-01 CHAMPION TECHNOLOGIES PREPD & BIL SHIP TO ADDRESS Received 3130 FM 521 to apply in prepayment of the charges on the property described hereon CITY, STATE, ZIP: Agent or Cashier USA FRESNO, TX 77545 (The signature here acknowledges only the ROUTE: amount prepaid ) Charges Advanced \$ DELIVERING CARRIER:
LEE'S TRUCKING COMPANY DESTINATION *If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight" CAR INITIALS AND NUMBER: SEAL NUMBER(S):

OF PACKAGES		Subject to Correction
1 TT	** NON-REGULATED **	GROSS
	XTOL 0609 FORMULATED TALL OIL	TARE
	PTBP-0609	NET
		All transportation provided hereunder is subject to the terms of Section 7 of the respective bills of lading identified above as if Georgia-Pacific initiated the Section 7 provision on the face of that Bill of Lading with respect to each shipment described below.

BASIC DESCRIPTION AND ASSOCIATED INFORMATION

RAIL CAR TRIP LEASED TO CONSIGNEE

Georgia-Pacific Chemicals LLC

WEIGHT*

(Signature of Consignor)

### SPECIAL INSTRUCTIONS

PO# 72980 Deliver On 02/10/2009 1 pm LOAD 45,000 LBS. SEND COA W/SHIPMENT.

DESCRIPTION FOR FREIGHT RATING PURPOSES:

Should,

THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

APPROPRIATE PLACARDS OFFERED/CORRECTLY AFFIXED

**EMERGENCY RESPONSE** INFORMATION ATTATCHED OSHA TAG(S)/LABEL(S) APPLIED

PINK HORIZ STRIPE OR PROD SPECIFIC TAG

Georgia-Pacific Chemicals LLC

POST OFFICE ADDRESS AND TELEPHONE NUMBER OF ORIGIN HWY 82/PAPERMILL ROAD / P.O. BOX 520

CROSSETT, AR 71635

870-567-7200

133 Peachtree St. N.E. Atlanta, Georgia 30303 APPROPRIATE PLACARDS CORRECTLY AFFIXED

**EMERGENCY GUIDE BOOK LOCATED IN CAB** 

Carrier:

Per

Per

(This Bill of Lading is to be signed by the shipper and agent of carrier issuing same.)

CH 7069-L (1/97)

IN CASE OF EMERGENCY CALL CHEMTREC TOLL FREE (800) 424-9300 DAY OR NIGHT

rivironmental Services
Ainer / Tank Cleaning Division
304 Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

# TANK WASH WORK ORDER

PO# C	Customer:		<del></del>		Data
PO#	1 /.				Date:
Total	LEE 5				1 1 1 1 1 0 7
Tractor A	Address:				Time:
Trailer / Container Number	Dropped By:				Need By:
2115	- Ku	sell they	<u> </u>		
CONTAINER TYPE: TO		ROLL DOOR BOX	☐ ISO CONT	AINER	DRY BULK
TANK TRAILER   TANK TRAILER	ROLL TARP BOX	☐ VACUUM BOX	☐ FRAC TANK	POLY TANK	VACUUM TRUCK
Compartment #	Last Cor	ntained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 FATTY Acid		81,642	i dievi		
2		· · · · · · · · · · · · · · · · · · ·			
3					
4					
5					
CLEANING CODES	WOR	K PERFORMED		TANK ENTRY F	PERMIT
1 Air Dry			Oxygen (19.5% -23.5%	%) #1 <mark>2                                   </mark>	_ #3 #4 #5
2 Quick Rinse			LEL (<10%)	#1 #2	#3#4#5
3 Cold Water Rinse			CO ² (<35 ppm)	#1 <u> </u>	#3 #4 #5
4 Hot Water Rinse			Toxic Vapor	#1 #2	#3 #4 #5
5 Steam Only (Per Hour)		· .	Signature:	<u> </u>	
6-Steam & Dry		/ 	Stripper Usage:		-
7 Rinse, Steam & Dry					and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s
8 Detergent Wash, Rinse & D	Ory 🔏	· · · · · · · · · · · · · · · · · · ·	Comments:		
9 Caustic Wash & Dry			1		
10 Caustic Wash, Rinse & Di	ry	<u> </u>	<u>.</u>		
11 Waste Water Surcharge			1		
12 Solvent Wash (Diesel # H	lours)	· · · · · · · · · · · · · · · · · · ·			
13 Solvent Wash (Stripper)		· · · · · · · · · · · · · · · · · · ·	1		
14 Exterior Tractor Wash					
15 Exterior Trailer Wash (w/o	Internal)	· · · · · · · · · · · · · · · · · · ·	1		
16 Exterior Trailer Wash (with	h Internal)	·			
17 Exterior Acid Brite Wash			Authorized Additi	onal Services:	
18 Hand Labor (# Men / # Ho	ours)				
19 Hydroblaster (# Hours)					
20 Solvent Wash (Green Stri	pper)				
21 Passivation					
Hose Cleaning					
Pump Cleaning			thoroughness of the tank	washing procedure or the total	akes no guarantees with respect to the I elimination of interior residues and/or
~ 0		1 1 2 0	release CES Environmental S	e equipment remains the resp ervices, Inc., Cleaning Division the advisorant was improved	consibility of the customer, and they hereby n, from any responsibility for claims arising cleaned, resulting in damage or loss.
Cleaned By:	Da	ate 1- 6 30-9			is in no manner responsible for any naterials left in their yard.
	· . · · · · · · · · · · · · · · · · · ·		damages or	losses of equipment and/or m	naterials left in their yard.
Inspected By:	D	ate	Print Name:	•	Date
			Signature:		
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	<b>原体</b> *	n, in ink, in indelible Pencil, or in	Shipper's No. 688	91-1	Page
	the Agent.		Agent's No.	<u> </u>	1 OF 1
	lassifications and lawfully filed tariffs in effect on acific Chemicals LLC (Shipper	the date of the receipt by the carrier of the propert	y described in the Original Bill of SETT, AR	Lading	Date 01/28/09
	//	d order, except as noted below, and is marked, cor on the route to said destination. Each carrier of, an prvice required hereby in accordance with the appli- int Bill of Lading set forth (1) if this is a rail or rail-w	signed and destined as indicated d any party at any time interested cable contract(s), if any, between ater shipment, in the Uniform Fre	below. Carrier agreed in, all or any of said Georgia-Pacific and ight Classification, and	es to carry the property Carrier, and nd (2)
CH	HAMPION TECHNOLOGIES		(Consignee)	If charges are prep "Prepaid."	paid, write or stamp here,
52 M 52	21			property described	nent of the charges on the hereon ent or Cashier
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	Cha	In Dundran		hereunder of Section of lading in Georgia-P Section 7 p that Bill of	ortation provided is subject to the terms 7 of the respective bills dentified above as if acific initialed the provision on the face of Lading with respect to ment described below.
SCRIPTION FOR FREI	GHT RATING PURPOSES:		RAIL CAR TRIP LEA	\SED	-Pacific Chemicals LLC gnature of Consignor)
-		SPECIAL INSTRUCTIONS			
LOAD 45,000	/29/2009 10 AM LBS. V/SHIPMENT.				
S IS TO CERTIFY THA	AT THE ABOVE NAMED MATERIALS ARE PROPE PORTATION ACCORDING TO THE APPLICABLE	ERLY CLASSIFIED, DESCRIBED, PACKAGED, M REGULATIONS OF THE DEPARTMENT OF TRA	ARKED AND LABELED, AND A	RE IN PROPER	
PPROPRIATE PI FFERED/CORRI	LACARDS EMERGENCY RE	SPONSE OSHA TAG(S)/	LABEL(S) APPLIED Z STRIPE OR PROI	) SPECIFIC	TAG
eorgia-Pacific	Chemicals LLC	POST OFFICE ADDRESS AND TELEPHONE NU HWY 82/PAPERMILL ROAD CROSSETT, AR 71635 870-567-7200			
	N.E. Allanta, Georgia 30303 PLACARDS CORRECTLY AFFIXED		EMERGENCY GUI	DE BOOK LOC	CATED IN CAB
j	25	Per	Marie Janger		
A 15. No.					

# fonmental Services

Tank Cleaning Division ariggs Rd. • Houston, TX 77021 one: (713) 676-1460 • Fax: (713) 676-1676

Trailer / Container Number Dropped By:  35  CONTAINER TYPE: TOTE BIN  TANK TRAILER ROLL TARP	ORANOJA  ING HONOR BOX  BOX VACUUM BOX  IST Contained  WORK PERFORMED	Oxygen (19.5% -23.5% LEL (<10%) CO ² (<35 ppm) Toxic Vapor Signature:	Heel - Non-Haz	PERMIT  #3 #4  #3 #4  #3 #4	UUMTRUCK / Rolloff / #5 #5 #5
Trailer / Container Number Dropped By:  CONTAINER TYPE: TOTE BIN  TANKTRAILER ROLL TARP  Compartment # La  1 2 3 4 5 CLEANING CODES 1 Air Dry 2 Quick Rinse 3 Cold Water Rinse	ROLL DOOR BOX BOX VACUUM BOX ast Contained	Oxygen (19.5% -23.5% LEL (<10%) CO ² (<35 ppm) Toxic Vapor	TANK ENTRY F	Need By:  DRY BULK  VACI  Drum /  PERMIT  #3 #4  #3 #4  #3 #4	/ Rolloff / #5#5
CONTAINER TYPE: TOTE BIN  TANK TRAILER ROLL TARP  Compartment # La  1 2 3 4 5 CLEANING CODES 1 Air Dry 2 Quick Rinse 3 Cold Water Rinse	BOX VACUUM BOX	Oxygen (19.5% -23.5% LEL (<10%) CO ² (<35 ppm) Toxic Vapor	TANK ENTRY F	DRY BULK    VACI   Drum /   Drum /     PERMIT   #4   #3   #4   #4   #4   #4   #4   #4	/ Rolloff / #5#5
Compartment # La  1 2	BOX VACUUM BOX	Oxygen (19.5% -23.5% LEL (<10%) CO ² (<35 ppm) Toxic Vapor	TANK ENTRY F	PERMIT  #3 #4  #3 #4  #3 #4	/ Rolloff / #5#5
Compartment # La  1 2	BOX VACUUM BOX	Oxygen (19.5% -23.5% LEL (<10%) CO ² (<35 ppm) Toxic Vapor	TANK ENTRY F	PERMIT  #3 #4  #3 #4  #3 #4	/ Rolloff / #5#5
Compartment # La  1 2	st Contained	Oxygen (19.5% -23.5% LEL (<10%) CO ² (<35 ppm) Toxic Vapor	TANK ENTRY F	PERMIT  #3 #4  #3 #4  #3 #4	/ Rolloff / #5#5
1 2 TACC  3 FAH 4 5 CLEANING CODES 1 Air Dry 2 Quick Rinse 3 Cold Water Rinse	st Contained	Oxygen (19.5% -23.5% LEL (<10%) CO ² (<35 ppm) Toxic Vapor	TANK ENTRY F ) #12 , 0	PERMIT#3#4#3#4	#5#5
4 5 CLEANING CODES 1 Air Dry 2 Quick Rinse 3 Cold Water Rinse	WORK PERFORMED	LEL (<10%) CO ² (<35 ppm) Toxic Vapor	) #1 <u>2~, 0</u>	#3 #4 #3 #4 #3 #4	#5
4 5 CLEANING CODES 1 Air Dry 2 Quick Rinse 3 Cold Water Rinse	WORK PERFORMED	LEL (<10%) CO ² (<35 ppm) Toxic Vapor	) #1 <u>2~, 0</u>	#3 #4 #3 #4 #3 #4	#5
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CLEANING CODES  1 Air Dry 2 Quick Rinse 3 Cold Water Rinse	WORK PERFORMED	LEL (<10%) CO ² (<35 ppm) Toxic Vapor	) #1 <u>2~, 0</u>	#3 #4 #3 #4 #3 #4	#5
1 Air Dry 2 Quick Rinse 3 Cold Water Rinse	WORK PERFORMED	LEL (<10%) CO ² (<35 ppm) Toxic Vapor	) #1 <u>2~, 0</u>	#3 #4 #3 #4 #3 #4	#5
2 Quick Rinse 3 Cold Water Rinse		LEL (<10%) CO ² (<35 ppm) Toxic Vapor	#1 #2 #1 #2	#3 #4 #3 #4	#5
3 Cold Water Rinse		LEL (<10%) CO ² (<35 ppm) Toxic Vapor	#1 #2 #1 #2	#3 #4 #3 #4	#5
		CO ² (<35 ppm) Toxic Vapor		•	#5
4 Hot Water Rinse			#1 42 #2	#3#4	
		T Signature: √ .1			#5 <u></u>
5 Steam Only (Per Hour)		J. J. J. J. J. J. J. J. J. J. J. J. J. J	7		
6 Steam & Dry		Stripper Usage:			<u> </u>
7 Rinse, Steam & Dry					
8 Detergent Wash, Rinse & Dry		Comments:			
9 Caustic Wash & Dry					
10 Caustic Wash, Rinse & Dry		_]			
11 Waste Water Surcharge					
12 Solvent Wash (Diesel # Hours)		_			
13 Solvent Wash (Stripper)	<u> </u>				
14 Exterior Tractor Wash					
15 Exterior Trailer Wash (w/o Internal)					
16 Exterior Trailer Wash (with Internal)				2	
17 Exterior Acid Brite Wash		Authorized Addition	onal Services:		
18 Hand Labor (# Men / # Hours)					
19 Hydroblaster (# Hours)					
20 Solvent Wash (Green Stripper)					
21 Passivation					
Hose Cleaning	<u></u>				III.
Pump Cleaning		CES Environmental Servico thoroughness of the tank w moisture. Final inspection of the release CES Environmental Se from any allegations that the	es, Inc., Cleaning Division, washing procedure or the to e equipment remains the re ervices, Inc., Cleaning Divis be equipment was imprope	stal alimination of intelle	nr residues and/or
Cleaned By: JR	Date <u>2 . 3 · 0 9</u>	CES Environmental Sen	vices, Inc., Cleaning Division losses of equipment and/or	on, is in no manner resp	onsible for any
Inspected By:	Date	Print Name:		Date	

HIPPING ORDER must be legibly filled in, in ink, in indelible Pencil, or in and retained by the Agent.			Shipper's No. 691	186-1	Page 1 OF 1		
Jon and	•		Agent's No.		I Or i		
RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of From: Georgia-Pacific Chemicals LLC (Shipper/Consigner) AT CROSSETT, AR					Date 02/01/09		
The property described belo property to destination, if or over all or any portion of sa	ow has been recieved by Carrier in apparent good its route; otherwise to deliver to another carrier of	d order, except as noted below, and is marked, con on the route to said destination. Each carrier of, an rvice required hereby in accordance with the applib by Bill of Lading set forth (1) If this is a rail or rail-w	icable contract(c) if any hatwood	Coordia. Dacific an	d Carrier and		
To: 2067-01 LAN	MBERTI USA, INC.		(Consignee)	If charges are pre	epaid, write or stamp here, PREPD & BIL		
SHIP TO ADDRESS: US 59 @ COUNTY RD 212					/ment of the charges on the		
CITY, STATE, ZIP: HUNGERFORD, TX 77448 USA					Agent or Cashier		
ROUTE:				(The signature he amount prepaid)	ere acknowledges only the		
DELIVERING CARRIER:	NAME OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PR	DESTINATION:		Charges Advanced \$			
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NO. AND TYPE OF PACKAGES	BASIC DES	BASIC DESCRIPTION AND ASSOCIATED INFORMATION			WEIGHT*		
1 TT	HOT Elevated temper	rature liquid, n.o.s.; 9;	ure liquid, n.o.s.; 9;		GROSS 76560		
UN 3257; III XTOL 656 MIXED T		ALL OIL ACIDS		TARE	31550		
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, and the second second second second second second second second second second second second second second se	***************************************			Section 7- that Bill o	Pacific initialed the provision on the face of of Lading with respect to pment described below.		
DESCRIPTION FOR FREIGHT RATING PURPOSES:  RAIL CAR TRIP LE TO CONSIGNE							
		SPECIAL INSTRUCTIONS			See Square Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of		
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Georgia-Pacific C	Chemicals LLC  2-/- 09  E. Atlanta, Georgia 30303	POST OFFICE ADDRESS AND TELEPHONE NU HWY 82/PAPERMILL ROAD CROSSETT, AR 71635 870-567-7200		-			
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EPAHO011000958

nvironmental Services

ner / Tank Cleaning Division

4 Griggs Rd. • Houston, TX 77021

none: (713) 676-1460 • Fax: (713) 676-1676

(N. 471.4973

### TANK WASH WORK ORDER

				and the second second second second	
PO # Custor	Date:				
			2/7/09		
Tractor	S:			Time:	
Trailer // Container Number Droppe	od By:			Need By:	
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CONTAINER TYPE: TOTE BI		ISO CONT	and the same	DRY BULK	
	TARP BOX	☐ FRAC TANK	POLY TAN	The reason of a second background and	UM TRUCK
Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum /	Rolloff
1 TAIL OIL				ja tita	
2					
3					
4					
5		·			
CLEANING CODES	TANK ENTRY PERMIT				
1 Air Dry		Oxygen (19.5% -23.5%	6) #Ao.n #2	#3 #4	#5
2 Quick Rinse		LEL (<10%)	#1	#3#4	#5
3 Cold Water Rinse		CO ² (<35 ppm)	#1	#3#4	#5
4 Hot Water Rinse		Toxic Vapor	, #1 <u>/8</u> #2	#3 #4	#5
5 Steam Only (Per Hour)		Signature 1	<b>\</b>		· · · · · · · · · · · · · · · · · · ·
6 Steam & Dry	/	Stripper Usage:	÷	S. C. C. C. C. C. C. C. C. C. C. C. C. C.	
7 Rinse, Steam & Dry		1			
8 Detergent Wash, Rinse & Dry		Comments:	are an area of the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second seco		and the same
9 Caustic Wash & Dry		1			
10 Caustic Wash, Rinse & Dry		1	•		
11 Waste Water Surcharge		1			
12 Solvent Wash (Diesel # Hours)					
13 Solvent Wash (Stripper)					
14 Exterior Tractor Wash					*
15 Exterior Trailer Wash (w/o Intern	ai)				
16 Exterior Trailer Wash (with Intern	al)		1		
17 Exterior Acid Brite Wash	Authorized Additional Services:				
18 Hand Labor (# Men / # Hours)		1			
19 Hydroblaster (# Hours)					
20 Solvent Wash (Green Stripper)					
21 Passivation					CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR
Hose Cleaning					
Pump Cleaning		CES Environmental Service	es, Inc., Cleaning Division, r washing procedure or the tot	nakes no guarantees wit	h respect to the
A con-		moisture. Final inspection of the release CES Environmental S	e equipment remains the res	ponsibility of the custom on, from any responsibili	er, and they hereby tv for claims arising
Cleaned By:	CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.				
Inspected By:	Date	Print Name:	· · · · · · · · · · · · · · · · · · ·	Date	



AIS SHIPPING ORDER must be legibly filled in, in ink, in indelible Pencil, or in Carbon and retained by the Agent.

Shipper's No. Page 69413-1 1 OF 1 Agent's No.

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the receipt by the carner of the property described in the Original Bill of Lading AT

From: Georgia-Pacific Chemicals LLC (Shipper/Consigner)

CROSSETT, AR

02/08/09

The property described below has been recieved by Carrier in apparent good order, except as noted below, and is marked, consigned and destined as indicated below. Carrier agrees to carry the property to destination, if on its route, otherwise to deliver to another carrier on the route to said destination. Each carrier of, and any party at any time interested in, all or any of said property over all or any portion of said order to destination agrees to perform every service required hereby in accordance with the applicable contract(s), if any, between Georgia-Pacific and Carrier, and otherwise subject to the terms and conditions of the Uniform Connestic Straight Bill of Lading set forth (1) if this is a rail or rail-water shipment, in the Uniform Freight Classification, and (2) if this is a motor carrier shipment, in the National Motor Freight Classification.

If charges are prepaid, write or stamp here.
"Prepaid." PREPD & BII To: 2067-01 LAMBERTI USA, INC. (Consignee) SHIP TO ADDRESS: \$. Received US 59 @ COUNTY RD 212 to apply in prepayment of the charges on the property described hereon. CITY, STATE, ZIP · Agent or Cashier **HUNGERFORD, TX 77448** (The signature here acknowledges only the amount prepaid ) ROUTE: DELIVERING CARRIER: LEE'S TRUCKING COMPANY DESTINATION: "If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight" CAR INITIALS AND NUMBER SEAL NUMBER(S): 7755

BASIC DESCRIPTION AND ASSOCIATED INFORMATION HOT Elevated temperature liquid, n.o.s., 9; UN 3257; III XTOL 656 MIXED TALL OIL ACIDS PTBP-0656

WEIGHT*

of lading identified above as if Georgia-Pacific initialed the Section 7 provision on the face of that Bill of Lading with respect to each shipment described below.

DESCRIPTION FOR FREIGHT RATING PURPOSES

RAIL CAR TRIP LEASED TO CONSIGNEE

Georgia-Pacific Chemicals LLC (Signature of Consignor)

PO# 4500262526 Deliver On 02/09/2009 noon Load 45,000 lbs. COA to accompany shipment.

THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

APPROPRIATE PLACARDS OFFERED/CORRECTLY AFFIXED

**EMERGENCY RESPONSE** INFORMATION ATTATCHED

OSHA TAG(S)/LABEL(S) APPLIED PRODUCT SPECIFIC LABEL, TAG, OR BAG

Georgia-Pacific Chemicals LLC

Webl 2-8-09

POST OFFICE ADDRESS AND TELEPHONE NUMBER OF ORIGIN HWY 82/PAPERMILL ROAD / P.O. BOX 520

CROSSETT, AR 71635 870-567-7200

Per

APPROPRIATE PLACARDS CORRECTLY AFFIXED

**EMERGENCY GUIDE BOOK LOCATED IN CAB** 

Carrier:

(This Bill of Lading is to be signed by the shipper and agent of carrier issuing same.)

CH 7069-L (1/97)